BRITISH COLUMBIA
Ministry of Energy and Mines
Energy and Minerals Division

FIVE YEAR MINERALS GEOSCIENCE PLAN FOR BRITISH COLUMBIA

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British Columbia Geological Survey and
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VICTORIA
BRITISH COLUMBIA

SEPTEMBER 2001

EXECUTIVE SUMMARY

One of the key roles of the British Columbia Geological Survey (BCGS) is to provide geoscience data to attract investment by the industry in mineral exploration in British Columbia. The Geological Survey of Canada (GSC) has a complementary role to that of the province in its mandate to carry out "national geoscience programs to define the geology and resources of Canada. The two surveys aid in the discovery of mineral deposits and the development of new mines which drive regional economies and help support a high standard of living for British Columbians and Canadians.

In order to fulfill this role effectively government needs to seek direction by consulting industry clients on what geoscience surveys and studies will be the most useful. This can be done by meeting with individual clients and advisory groups representing the private sector. The B.C. Geological Survey has a Technical Liaison Committee consisting of representatives from various industry organizations, such as the B.C. and Yukon Chamber of Mines, Canadian Institute of Mining and Metallurgy and Mining Association of British Columbia, to review their ongoing economic development programs. For longer term planning for geoscience needs many Canadian provinces and territories hold joint industry and government workshops to determine what projects will be the priority for the next 5 to 10 years.

The last major planning exercise concerning British Columbia's geoscience needs was a joint federal and provincial government meeting held in 1994 which identified the priorities for developing the province's geoscience databases related to bedrock and surficial geology mapping, geochemistry, geophysics and mineral deposits. Since many of the priority projects identified at the 1994 meeting have been completed or are currently in progress, it is time to update the long term plans for government geoscience.

On February 27, 2001 a British Columbia Mineral Industry Geoscience Needs Workshop was held in Vancouver to develop project ideas, review existing proposals and determine the high priority surveys and studies. The Workshop was attended by industry, university and government representatives. This report documents the Workshop proceedings and lists the projects that industry identified as a high priority to attract mineral investment to British Columbia.

The key priorities identified by the industry representatives were as follows:

Complete 24 mapping projects at both 1:50 000 and 1:250 000-scale to provide the basic infrastructure data layer for mineral exploration.

Undertake 26 mineral deposit and mining camp/exploration area studies to highlight deposit types and regions deserving more exploration.

Focus industrial mineral studies on projects like carbonatites, tantalum, "green" minerals and market studies.

Deliver selected thematic and integrated studies that provide key results for industry.

Enhance delivery of digital data, such as geology, RGS and MINFILE.

Other important points raised during the meeting were the change of the client base to predominantly junior companies, industry interest in topical data, such as information on PGEs, integrate RGS and geophysical data with other studies, and the basic need to complete the basic regional geochemical and aeromagnetic map coverage of the province.

The BCGS and GSC will work together over the next 5 years to address these priorities. Capacity and funding limitations will require choices to be made. As well, changing market and commodity conditions wil affect investments by the mineral exploration industry and the two Surveys will need to be proactive to respond to these changing needs. The continued advice of industry clients will be essential to ensure the right projects are chosen.

TABLE OF CONTENTS

Executive Summary . . . . . *iii*

Introduction 1

Workshop Procedure 1

Bedrock Mapping 5

Mineral Deposits 11

Industrial Minerals Studies. 15

Thematic Projects 17

Integrated Projects 19

Geochemistry and Geophysics. 21

Conclusions 23

Acknowledgements 24

Appendix I 25

Mapping Projects 26
Mineral Deposit Study Projects 32
Industrial Mineral Projects 38
Thematic Projects 39
Integrated Projects 44

INTRODUCTION

On February 27, 2001, a one day British Columbia Mineral Industry Geoscience Needs Workshop was held in Vancouver with industry representatives to develop project ideas, review existing proposals and determine the high priority surveys and studies. This report documents the Workshop proceedings and lists the projects that industry identified as a high priority to attract mineral investment to British Columbia. Many of these projects will also benefit other client groups of the two surveys and the general public.

The British Columbia Geological Survey (BCGS) and the Geological Survey of Canada (GSC) are working together to provide clients with a cost effective program that delivers an assortment of geoscience programs. The Workshop focused on identifying bedrock mapping and mineral deposit geoscience studies which would support the British Columbia mineral industry. Other program aspects of both Geological Surveys, such as energy geoscience and geological hazards, will be dealt with at another time with the appropriate client groups.

This Workshop report updates plans produced at a two day meeting of government representatives at Dunsmuir Lodge in Sidney in 1994. These plans are outlined in a document, titled "A Joint Federal/Provincial Plan to Address Selected Geoscience Needs for British Columbia", which identified the priorities for developing British Columbia's geoscience databases related to bedrock and surficial geology mapping, geochemistry, geophysics and mineral deposits. Many of the priority projects identified in the 1994 Dunsmuir Meeting have been completed or are currently in progress.

Industry and government representatives proposed 39 mapping, 42 mineral deposit, 38 thematic and 9 integrated projects for consideration. Following discussions of their relative merits, they were assigned priorities by the minerals industry representatives.

WORKSHOP PROCEDURE

A key aspect of the Vancouver Workshop was to get strong representation of companies and individuals interested in British Columbia's mineral industry geoscience needs. The industry participants were selected to represent a cross-section of the province's mineral exploration sector with the additional proviso that they have knowledge of British Columbia's geology. More than 40 representatives from the private sector were invited and 16 participated. A number of major companies were approached and some agreed to send representatives to the Workshop; however, for various reasons none were able to participate. As noted by Bill Wolfe in his introductory comments, this reflects the current dominance of junior companies in mineral exploration. Representatives from one company, Teck Exploration Ltd., completed their evaluation of the information after the meeting. University representatives for the three geoscience degree-granting institutions were also invited to attend. Government participants were chosen to represent their two organizations and facilitate the Workshop. The list of participants is shown in Table 1.

Prior to the meeting, a list of government-suggested projects with brief summaries were posted to a web site. These projects were collated at a joint GSC-BCGS meeting held in Victoria on February 13, 2001. Two hundred and nineteen projects were tabled in Victoria and a subset of 119 projects, relevant to the mineral industry, were chosen to be put forward at the Workshop. As well, industry input was solicited before the meeting by email for project ideas. They proposed 22 projects, including 10 new ones which were added to the Workshop lists. One of the primary suggestions from industry participants for a improving a similar workshop in the future would be to reduce the list of proposed projects to be considered in one day.

The Workshop consisted of an introduction to the meeting process, opening comments on the mineral industry by Bill Wolfe and industrial minerals by Ben Ainsworth, three separate sessions in breakout groups to develop new geoscience study ideas and examine the proposed projects and voting on the final lists. All participants received binders with reference maps and lists of all the government projects under consideration. Industry projects submitted by email were posted with the government proposals on the walls. For the breakout groups the industry representatives were asked to chose between three geomorphological belt groupings: Omineca/Rockies, Intermontane and Coast/Insular. They then spent 2 hours in their first breakout group creating new ideas, reviewing the industry suggestions, and discussing the government project suggestions. In the afternoon, each group discussed projects in the remaining geomorphological belts.

The projects were grouped into 5 types. These were *bedrock mapping projects* that involved mapping on a variety of scales, *mineral deposit studies* at both camp and deposit scales, *industrial mineral studies*, *thematic studies* and *integrated projects*. Integrated projects are large projects involving multiple disciplines, requiring support from and co-ordination by more than one organization, and using significant human and financial resources. Some recent examples of integrated geoscience projects in British Columbia are the Ancient Pacific Margin and Nechako NATMAP projects, the Sullivan Project and the Frontier Geoscience Program.

Following the breakout sessions the industry participants were asked to vote on all the projects using coloured dots. They were asked to choose 10 of the 39 mapping projects; 10 of the 42 mineral deposit studies; 5 of the 11 industrial mineral studies; 5 of the 39 thematic studies and 3 integrated projects from the list of 9 projects. These results were combined with the

TABLE 1
INDUSTRY, UNIVERSITY AND GOVERNMENT PARTICIPANTS

Name	Affiliation	Name	Affiliation
Ben Ainsworth	Ainsworth-Jenkins Holdings Inc.	Dave Fleming	Independent
Mark Baknes	Rimfire Minerals Corp	Graeme Evans	Teck Exploration Ltd.
Paul Baxter	Teck Exploration Ltd.	Randy Farmer	Teck Exploration Ltd.
Peter Bradshaw	First Point Minerals Corp.	Peter Holbek	Atna Resources Ltd.
Gerry Carlson	Copper Ridge	Bruce McKnight	BC & Yukon Chamber of Mines
Nick Carter	Independent	Peter Mustard	Simon Fraser University
Fiona Childe	IMAP	Wayne Roberts	Western Prospector Group Ltd.
Steve Cook	Hudson Bay Expl. & Dev. Co.	John Thompson	Teck Exploration Ltd.
Fred Daley	Teck Exploration Ltd.	Dick Tosdal	MDRU, University of British Columbia
Linda Dandy	Independent	Bill Wolfe	Independent
Name	**Affiliation**	**Name**	**Affiliation**
Lyn Anglin	Geological Survey of Canada	Nick Massey	BC Geological Survey
Mike Cathro	Ministry of Energy, Mines	JoAnne Nelson	BC Geological Survey
Mike Cecile	Geological Survey of Canada	Suzanne Paradis	Geological Survey of Canada
Sandy Colvine	Geological Survey of Canada	Jan Peter	Geological Survey of Canada
Fil Ferri	BC Geological Survey	Tom Schroeter	BC Geological Survey
Cathie Hickson	Geological Survey of Canada	George Simandl	BC Geological Survey
Trygve Höy	BC Geological Survey	Ron Smyth	BC Geological Survey
Dave Lefebure	BC Geological Survey	Bert Struik	Geological Survey of Canada
Carmel Lowe	Geological Survey of Canada	Jim Ryan	Geological Survey of Canada

Photograph 1. Participants in 2001 B.C. Geoscience Needs Workshop.

recommendations from Teck Exploration staff to produce short lists of the high priority projects for mapping surveys, mineral deposit and industrial mineral studies and thematic and integrated projects. The industry participants generally felt that some dollar value should have been attached to each project to allow them to better assign a priority. As well, they felt that it would have been more constructive to incorporate financial implications into the voting process.

The Workshop project lists will provide a basis for developing economic development geoscience programs by both surveys for the next 5 years. Since a key British Columbia Ministry of Energy and Mines objective is to provide data and assistance which will attract exploration dollars to the province to find and develop new mines, many of the projects that are priorities for industry will be undertaken by the BCGS. The GSC mandate is broader; economic development is only one of a number of objectives. Therefore, the results of the Workshop will influence those parts of their program directed at the Mineral Industry. This report has particular relevance within the GSC to the Mineral Resources Division, based in Ottawa, and selected mapping projects provided by the Vancouver and Sidney offices.

BEDROCK MAPPING

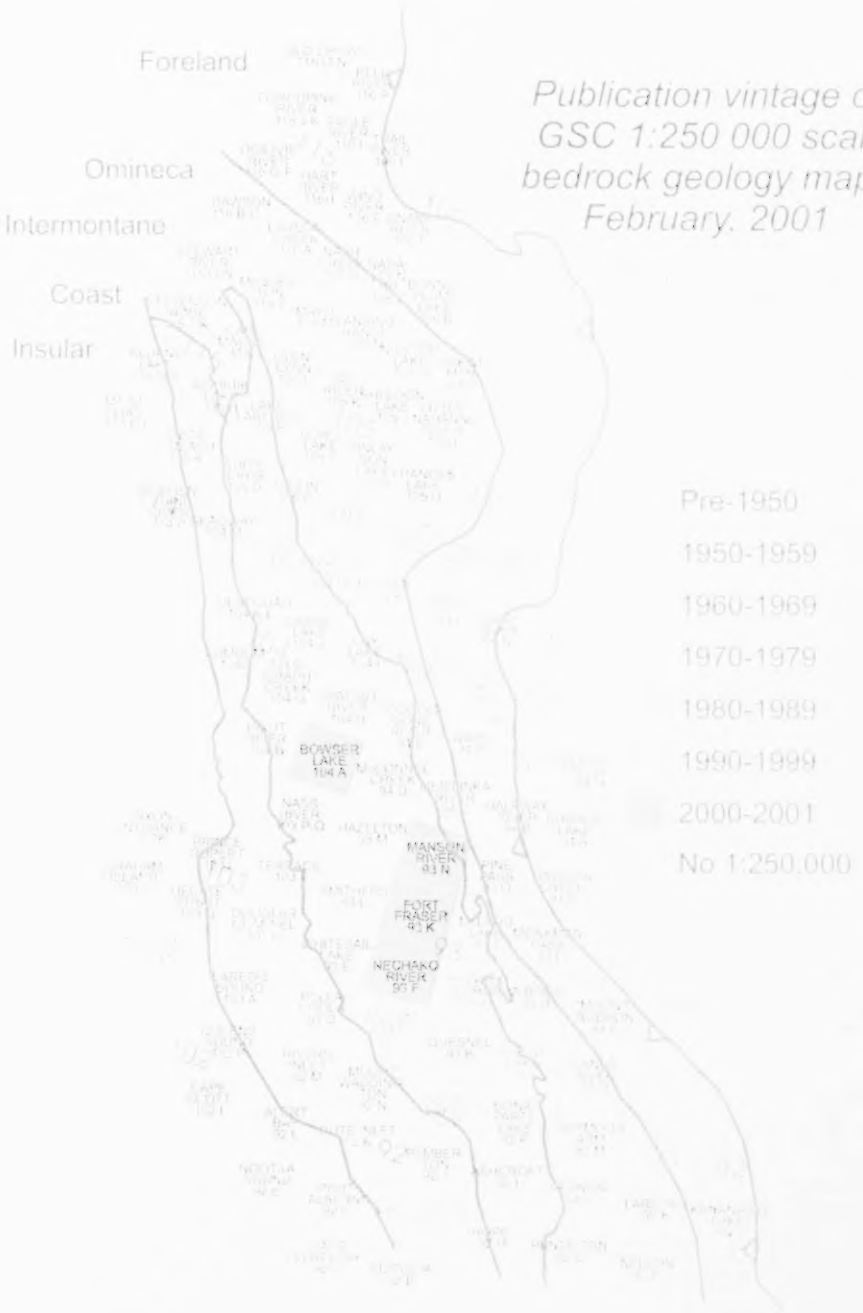
Government carries out bedrock mapping surveys to provide a basic data layer for a wide variety of clients who require geoscience information to find new mineral deposits, predict hazards, search for energy resources, complete geotechnical studies, do research, etc. Mapping completed with the primary objective of assisting the mineral industry will also benefit other client groups of the two surveys and the general public. Bedrock mapping projects can be regional (1:250 000-scale) or more detailed (1:50 000-scale). The field work for 250k mapping projects usually involves 4 to 6 seasons and one or two project geologists. These projects typically result in a new 1:250 000 map sheet with a bulletin upon completion. Annual reports, scientific articles and maps at 1:100 000, or sometimes 1:50 000-scale, are published during the 250k projects. In contrast, field work for 50k mapping projects typically involves 2 to 4 seasons focused on a geological belt or specific map sheets led by one project geologist. Preliminary maps, annual reports and final maps at 1:50 000-scale are published; some of these projects lead to a paper or bulletin and scientific articles.

The Geological Survey of Canada has been mapping the province since British Columbia joined Canada. They produce the 1:250 000-scale maps for the province. The current status of these map sheets is shown on Figure 1. A number of these sheets have not been re-mapped in the last 25 to 30 years, the generally acknowledged period for maps to become outdated. Mapping projects are in progress in the Vernon (82L), Atlin (104N) and Jennings River (104O) sheets and, starting in 2001, in the Bella Coola (93D) sheet.

Early work of the British Columbia Geological Survey and its precursor organizations focused on mineral deposits and property descriptions. Geological mapping by the BCGS started after the Second World War with an initial focus on mining camp and exploration areas. During the 1980s, the province expanded its efforts and began a program of systematic 1:50 000 scale bedrock mapping. Approximately 12% of the province has been covered with quality maps in the last ten years (*see* Figure 2). Mapping projects at 1:50 000 scale are in progress in the Bonaparte, Cariboo Lake, and Ecstall Belt. Projects are starting in 2001 in the Cry Lake, Bella Coola and Nakina (south of Atlin) areas, the latter two in conjunction with GSC Targeted Geoscience Initiative projects.

Most of the priority map areas identified in 1994 have been completed or are in progress. At the 2001 Vancouver Workshop industry representatives ranked 26 bedrock mapping projects as a priority (Table 2 and Figure 3). A complete list of all mapping projects considered at the Workshop is given in Appendix I. The priority mapping projects cover the province and address areas with the potential to host a variety of mineral deposit targets, including sedex, Eskay Creek-type and Broken Hill-type deposits.

Photograph 2. Recording results during one of the breakout sessions.


Foreland
Omineca
Intermontane
Coast
Insular
Publication vintage of
GSC 1:250 000 scale
bedrock geology maps
February, 2001
Pre-1950
1950-1959
1960-1969
1970-1979
1980-1989
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BOWSER LAKE 104 A
MANSON RIVER 93 N
FORT FRASER 93 K
NECHAKO RIVER 93 F

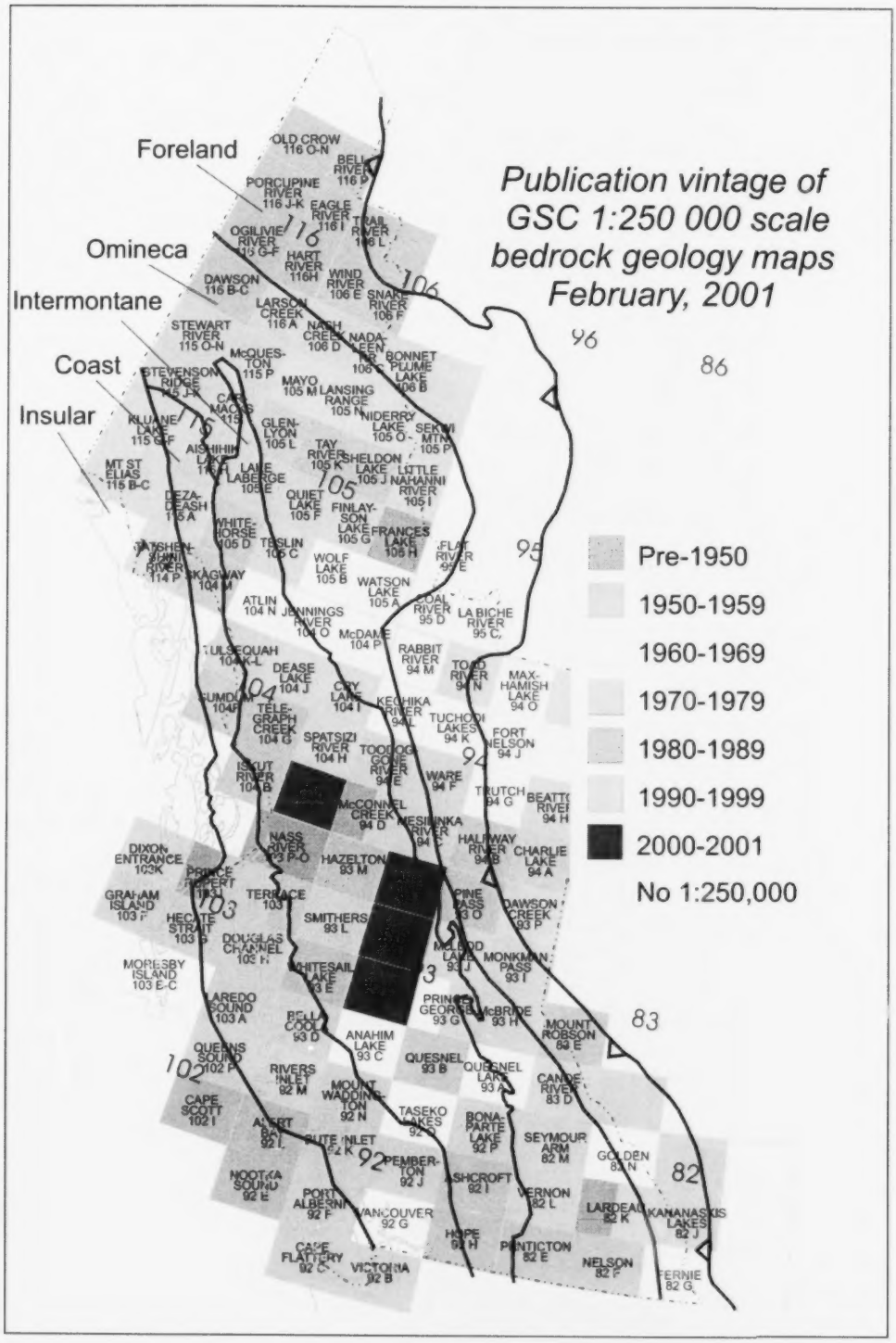

Figure 1. Publication Vintage of 1:250 000 Scale Bedrock Geology Maps.

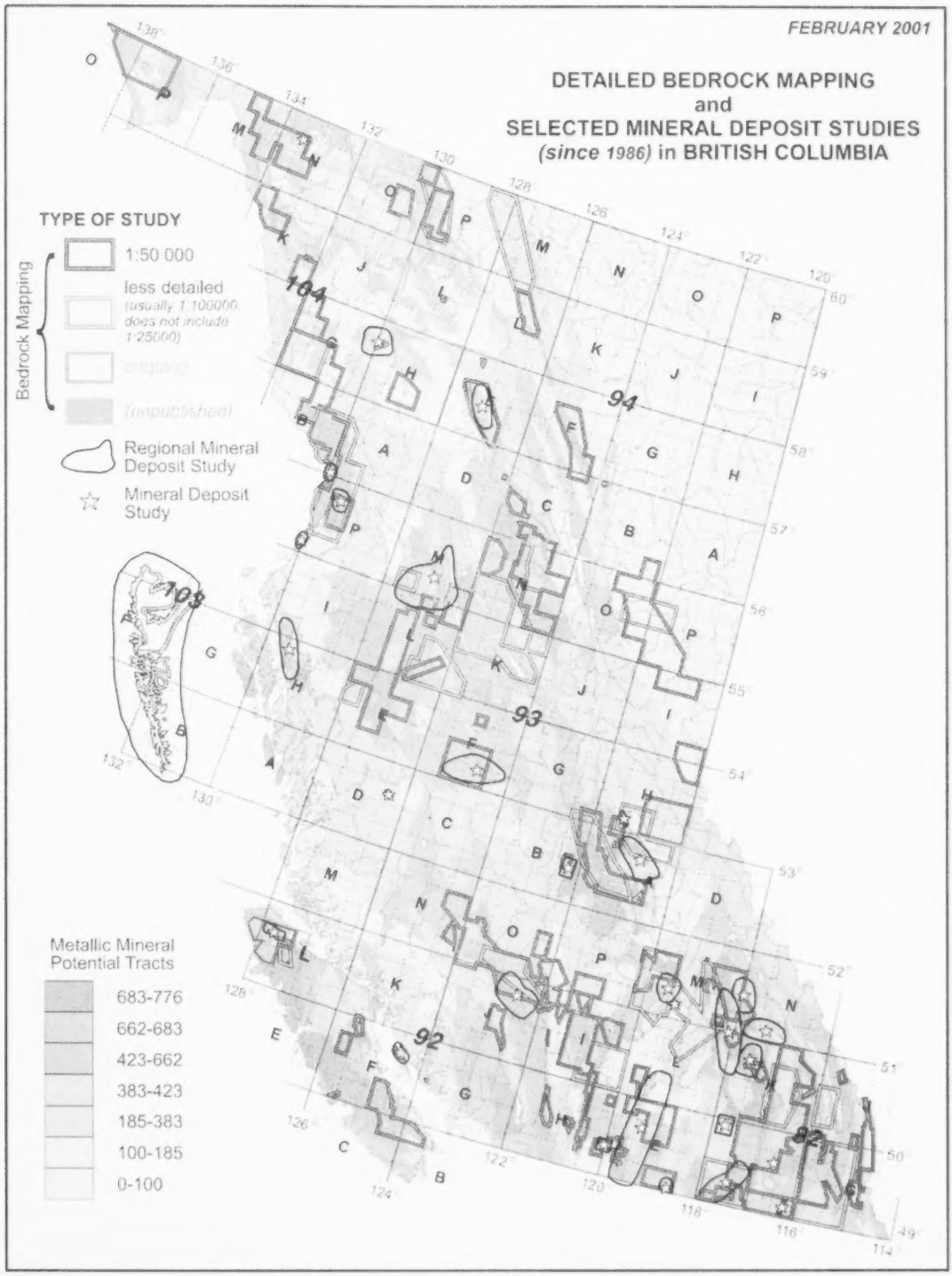

Figure 2. Extent of Detailed Bedrock Mapping Studies in B.C.

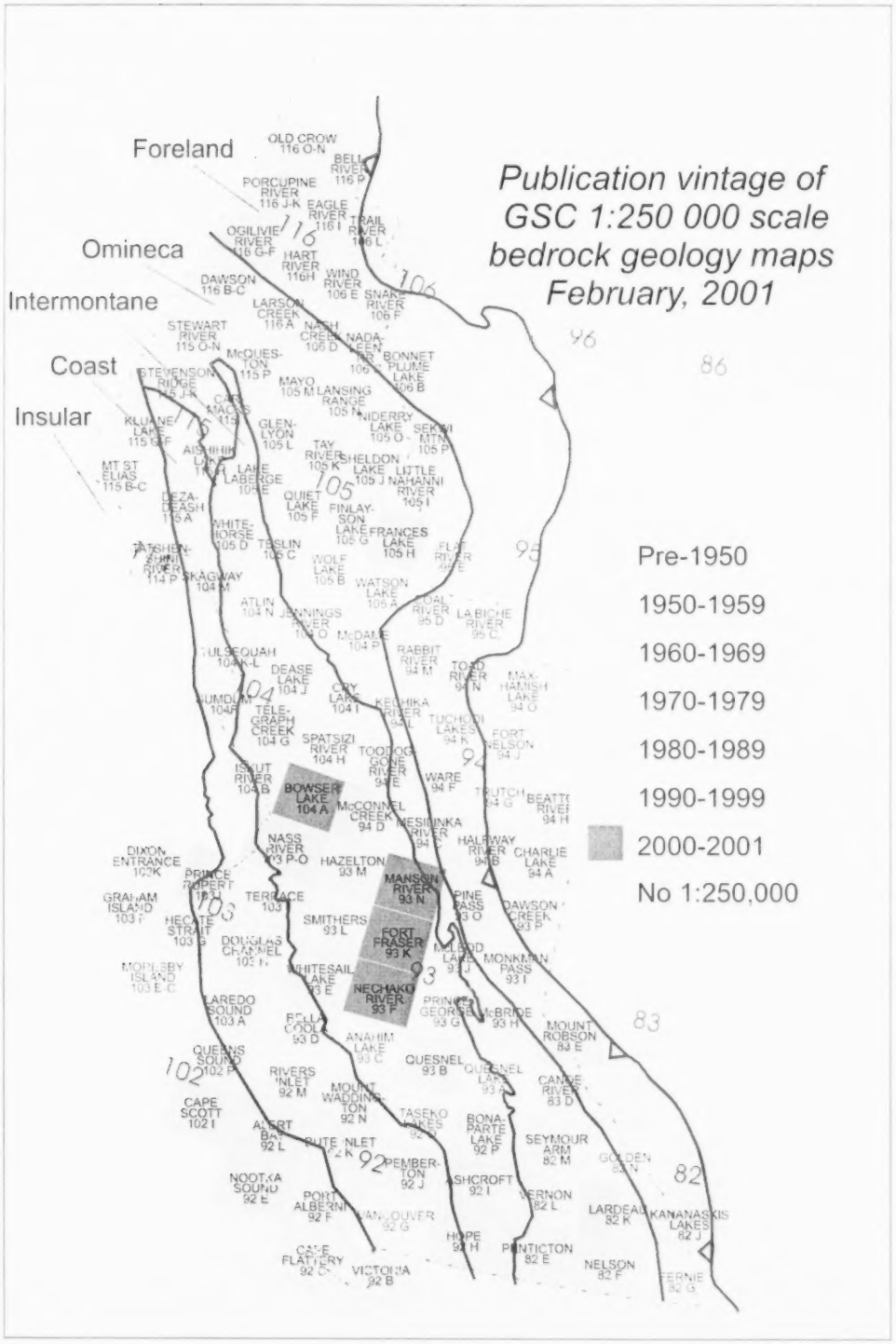

Figure 1. Publication Vintage of 1:250 000 Scale Bedrock Geology Maps.

Figure 2. Extent of Detailed Bedrock Mapping Studies in B.C.

TABLE 2
LIST OF PRIORITY MAPPING PROJECTS FOR B.C. MINERAL INDUSTRY

AREA	PRINCIPAL GOAL	INDUSTRY BENEFITS
82K/3, 6, 11, 82M/11, 14, 093A/7, 10 Kootenay Arc to Barkerville	Refine stratigraphy and structure of Eastern Kootenay terrane and relationships to high-grade metamorphic complexes in northern Kootenay Arc	Better understanding of settings of mineral deposits; improved exploration guides
93L/4 Southern Howson Range (Smithers)	Map Mesozoic volcanics on edge of Bowser Basin	Attractive geological setting for Eskay Creek-type and epithermal deposits
94M Rabbit River	Upgrading of 1:250,000 mapping; better definition of structural style and distribution of metallotects	Guide for further mineral exploration in relatively accesssible area
82F/7 82F/10 82F/15 West flank of Purcell Anticlinorium	Upgrade the stratigraphy/ metallogeny of the Upper Purcell Supergroup and Lower Windermere	This stratigraphy has potential to host a variety of Pb-Zn and barite sedex, Au, stratabound Cu, skarn-hosted Mo and W and gemstone deposits
94K/2(NW) 94K/3 94K/4(E) 94K/5(E) 94K/6 94K/7(SW) 94K/11 94K/12 Muskwa	Map the Muskwa Assemblage; a metal-rich stratigraphic package elsewhere	Area ripe for grass-roots exploration for sediment-hosted Cu and Pb-Zn
103J/1 103J/2 103J/7 103J/10 103G/15 103G/16 Dundas and Porcher Islands	Map extension of Alaska VMS belt, particularly Alexander Terrane metavolcanics	Improved knowledge of poorly understood mineral belt
104I/15 104I/16 Cry Lake-Major Hart Area	Map frontier area underlain by suspected Yukon-Tanana Terrane, ultramafics, North American sediments and Eocene intrusions	Delineate prospective stratigraphy for VMS and examine epithermal Au-Ag potential near Eocene intrusions
104G Telegraph Creek	To provide improved data on the distribution, nature, stratigraphy, age, petrology, and metallogeny of Mesozoic strata	Improved mineral deposit model for Eskay Creek type stratabound base and precious metal deposits in BC
104G/1 104G/8(W) 104G/9(S) North Bowser Margin	Map Mesozoic volcanics on edge of Bowser Basin	Attractive geological setting for Eskay Creek-type and epithermal deposits
82M/2 82M/3 82M/6 82M/11 82M/13 82M/14 Shuswap Metamorphic Rocks	Produce modern maps with detailed units	Provide key information to encourage exploration in an area often ignored and very poorly understood
93B Quesnel	Make fully new geology map	improved mineral potential map and Cu-Au and Au targets in oceanic and arc terranes
103I/9(W) 103I/10(E) 103I/15 103I/16W Zymoetz River	Upgrade geology in an area of high mineral potential	Detailed mapping of region with known VMS, porphyry and skarn potential
93N Manson River	Make an up to date 1:250 000 scale map of the Manson River area	Best information for mineral exploration evaluation
103I/2 103I/7 Kitimat Area	Map out distribution of felsic volcanics and related massive sulphide occurrences	Potential new VMS camp
92C/9S 10S Leech River Complex	Detailed mapping of the Leech River Complex	High mineral potential area; attractive for industrial mineral deposits, gold veins, VMS, etc.

CONTINUED - TABLE 2
LIST OF PRIORITY MAPPING PROJECTS FOR B.C. MINERAL INDUSTRY

AREA	PRINCIPAL GOAL	INDUSTRY BENEFITS
92J/7 92J/8W 92J/10W Pemberton	Identify metavolcanic rocks with VMS potential in pendants in Coast Belt	Outline areas with previously unrecognized "greenstone belt" potential for VMS deposits
93N/6, 11, 13, 14 Lustdust Area	Map Cache Creek and cross-cutting mineralizing intrusions	Characterize the setting for porphyry, manto and skarn deposits
104I/2 104I/1W Kutcho Belt	Document regional volcanics that host Kutcho Creek deposits	Detailed maps showing favourable stratigraphy for VMS deposits
94E Toodoggone River	Provide a modern 1:250K for mineral resource framework; study displacement of major faults; examine Stikine Assemblage	Cu Pb Zn Au Ag
103P Nass River	Provide maps and a better understanding of the Mesozoic strata of western Stikinia	Provide a better framework for exploration of sedimentary and plutonic-hosted mineral deposits (*e.g.* Eskay Ck)
92E/16 North of Gold River	Map large pendants of mineral-rich Sicker Group	Identify areas with polymetallic VMS potential, such as Dragon property
92L/2 92L/7 92L/10S; 92E/15N Bonanza Lake to Zeballos	Map a little known Jurassic volcanic belt with high mineral potential	Exploration interest for skarns, porphyries and veins; VMS in basal Bonanza and limestone and marble in Quatsino
82G Fernie	New map, GIS	Better understanding of metallogenesis, delineation of prospects
103G 103H Hecate Strait and Douglas Channel	Provide new bedrock geology map	Improved delineation & understanding of rocks hosting Au skarns, VMS deposits, Au veins (Surf Inlet type)

Proposed projects are listed in order of ranking by industry representatives

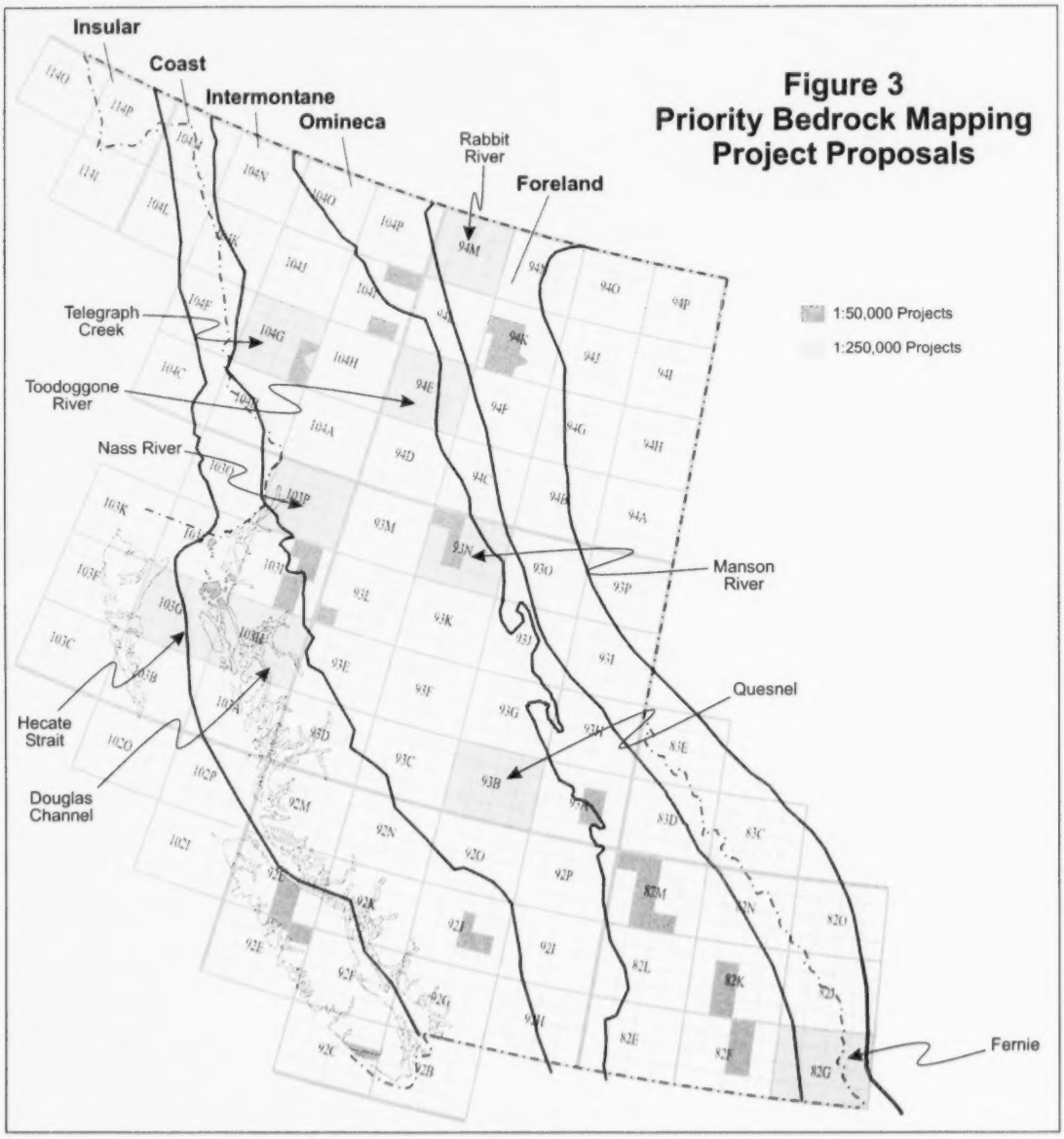

Figure 3. Priority Mapping Projects for B.C. Mineral Industry.

MINERAL DEPOSITS

Mineral deposit studies by both levels of government aim to provide the knowledge base with which to stimulate exploration, to find new ore bodies, and to assess and manage the resource land base. Presently, over 12,000 mineral occurrences are known in British Columbia including 3600 developed prospects, past producers or mines.

To meet these ends, four types of mineral deposit study have be undertaken spanning a spectrum of map-scales and focus:

(1) **Descriptions of individual deposits:** These, typically, would characterize the style of mineralization and its structural and stratigraphic setting. Often they are focused on new or poorly understood deposits where improved data can stimulate exploration in adjacent or other areas. These may also be the subject of MSc or PhD thesis studies.

(2) **Studies of groups of deposits, such as in a mining camp or exploration area:** These studies may involve bedrock mapping at 1:10 000 to 1:20 000-scale as well as investigating the mineralization styles and their inter-relationships.

(3) **Thematic studies of a regional to provincial scale:** These may vary in focus including regional metallogenic studies, studies of particular deposit types throughout B.C., or studies directed towards identifying the potential for new deposit types. They include a varying mix of desktop compilation and field and laboratory-based studies. Note that these projects are discussed in more detail under thematic projects.

(4) **Deposit models:** A series of deposit models applicable to British Columbia has been published over the last five years. Although several important deposit model types have yet to be completed, particularly amongst the industrial minerals, they were not a subject of discussion at the meeting.

Mineral deposits have been a focus of study by both government agencies for over 100 years and the published GSB and GSC reports are critical sources of information, along with industry reports filed as assessment reports. The variety of topics of studies undertaken reflects both the variety of mineralization within the province and the evolution of interest of the mining and exploration industries. Over the last fifteen years, government studies have been made of a number of deposits and mining camps which have included VMS, Sedex, porphyry-Cu-Au, skarn, carbonate-hosted Pb-Zn and a variety of Au-Ag vein deposit types.

The Dunsmuir meeting identified two extensive lists of individual deposits (24 studies) and mineral camps (56) that needed study. Some work has been completed by government or universities on more than a third of these selections (11 deposits; 22 camps) since 1994. The remaining suggestions were included in the government planning exercise; however, several of these were deemed to be of lower priority in 2001 and not reviewed at the Vancouver Workshop.

The Workshop results are presented in Table 3, Figure 5 and Appendix I. The industry representatives generally placed a higher priority on mining camp studies for government surveys, although several individual deposit studies were also considered important.

In general, they gave higher priority to studies centered on platinum group elements and massive sulphides (Broken Hill and VMS types) with a lower interest in gold. This reflects the state of knowledge as well as current commodity market conditions coupled with a desire for more information about poorly understood mineral deposit types in the province. Although recognizing the need for advanced planning, participants felt that the project choices should reflect changing market/commodity conditions (*i.e.* PGEs, Tantalum, REE, etc.).

There was some concern and interest as to how information is disseminated in deposit-specific work on exploration-stage prospects held by junior companies. Some participants encouraged the two Surveys to maintain their role of publishing new data on relevant company discoveries and developments.

TABLE 3
PRIORITY MINERAL DEPOSIT STUDIES FOR B.C. MINERAL INDUSTRY

TITLE	PRINCIPAL GOAL	INDUSTRY BENEFITS
Navan (082M 279-281)	Determine nature of mineralization and setting; compare to classic Broken Hill deposit	Demonstrate potential for BHT deposits in SE BC; provide exploration vectors
Moyie Sills - PGE (082F/8,9,16; G/12,13; K/1)	Indicate potential in sills; geochemistry; petrography; RGS re-evaluation/sill sections	Establish potential of target and possible exploration guides
Southern Nicola camp (092H/NE, I/SE)	Evaluate the potential for VMS mineralization in this new exploration area	Improved understanding of stratigraphic and other controls on VMS mineralization
Harrison Lake (Giant Mascot) camp (092H/12)	Determine the nature of, and controls on, PGE mineralization in the mafic-ultramafic rocks.	Highlight methods for evaluating tholeiitic intrusion-hosted Ni-PGE deposits in BC; potential exploration vectors for use in other occurrences
Franklin camp (082E/8)	Document and characterise the occurrence of PGEs in Eocene Coryell Intrusions including the Maple Leaf deposit	Identify potential new targets for PGE exploration; new exploration guidelines.
Dundas-Porcher Islands camp (103J/SE)	Characterise style and setting of VMS mineralization	Increased knowledge base in poorly understood prospective mineral belt
Atlin camp (104N/12)	Confirm and document reported PGEs in placers;	Highlight potential for PGE sources in northern BC
OK porphyry Cu-Mo (092K 008)	Determine lithologic and structural controls on mineralization	Highlight the potential for large Porphyry Cu-Mo deposits in an underexplored belt.
Fireweed (093M 151)	Confirm syngenetic nature of mineralization and relationship to felsic volcanics.	Opens up a new exploration target in Cretaceous volcanic sequences of central BC
Thorn (104K 116)	Determine style and setting of Tertiary Au-Ag acid-sulphate mineralization	Potential for transitional deposits in Sloko Gp; better exploration guidelines
Re-evaluation of Bronson Creek-Telegraph Creek area (104B, G)	Use wealth of data, in conjunction with fieldwork to improve interpretations of mineral deposits	Revisit occurrences explored during the late 1980's flow through period to identify missing opportunities
Potential for PGE's in Triassic intrusions of VI (092B/13; C/16; F/1,5; L/1)	Map; sample; re-interpret RGS; re-analyse for PGE's;	new exploration targets and their possible geological setting
Kena Gold (082FSW237)	Determine lithologic setting and structural controls of a poorly understood deposit	Draw attention to the potential for bulk-tonnage Au deposits in the Rossland Grp
Spire (082M 278)	Document and map new Besshi-type VMS discovery in the Goldstream camp	Highlight the potential for additional discoveries in Lardeau Grp rocks

CONTINUED - TABLE 3
PRIORITY MINERAL DEPOSIT STUDIES FOR B.C. MINERAL INDUSTRY

TITLE	PRINCIPAL GOAL	INDUSTRY BENEFITS
Kitimat VMS District (103I/2)	Evaluate the setting and stratigraphic position of VMS deposits in a underexplored Jurassic volcanic package.	Highlight a prospective VMS metallotect
Silver Lynx (082FSW378)	Establish the style and setting of massive sulphide mineralization; determine stratigraphic controls	Understanding of a new mineral deposit type in the Rossland Group
Britannia camp (092G/11)	Evaluate stratigraphic setting of VMS deposits in the Cretaceous Gambier Gp	Highlight potential for VMS in other Cretaceous enclaves in the Coast Belt
Zeballos camp (092L/2)	Determine lithologic and structural controls on Au mineralization associated with Tertiary granitic intrusions.	Potential new exploration guidelines.
Lustdust (093N 009)	Map lithologies and alteration patterns; determine structural controls on mineralization	Show importance of relationships between porphyry, skarn and manto deposits
Terrace mining camp (103I/7-11)	Determine structural controls on the numerous Au vein occurrences and evaluate how they relate to Tertiary extension	Better exploration vectors
PGE potential of Princeton-Hedley Belt (Coquihalla Intrusions) (092H/6,11)	Study mineral occurrences and related intrusions; sample for PGE analysis	Information on 'hot' commodity in area requiring study
Manto potential of NE flank of Cassiar batholith (104P)	Metallogenic study of Paleozoic carbonates on NE flank of the Cassiar batholith	New exploration vectors in area of potential
MINFILE evaluation to focus targets	Review and assess areas with siginificant aggregations of MINFILE occurrences; assign deposit types	clearer targets for exploration; new exploration vectors to apply in other areas
Alice Arm (Kitsault) camp	Evaluate and characterise the varying styles and settings of mineralization in the camp.	Refined exploration guidelines especially for new deposit types
Tatsamenie (Golden Bear) camp	Document the relationships between Carlin style mineralization and porphyry deposits	Improved understanding of Carlin type deposits in this area; refined exploration vectors for use elsewhere in BC
Gamsby VMS camp	Evaluate bimodal volcanic sequence for Kuroko-type VMS	Point Industry towards a new prospective metallotect

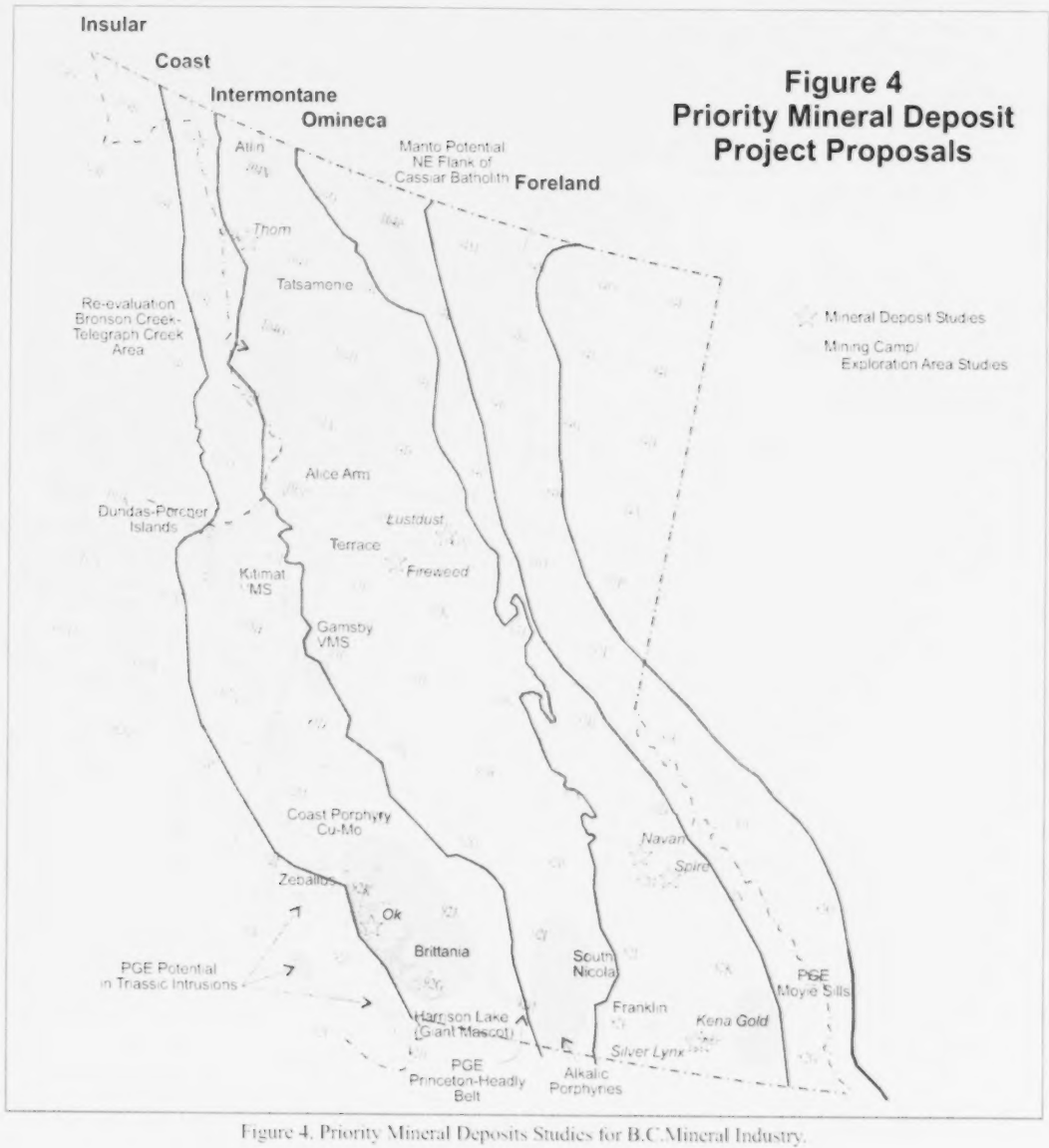

Figure 4. Priority Mineral Deposits Studies for B.C.Mineral Industry.

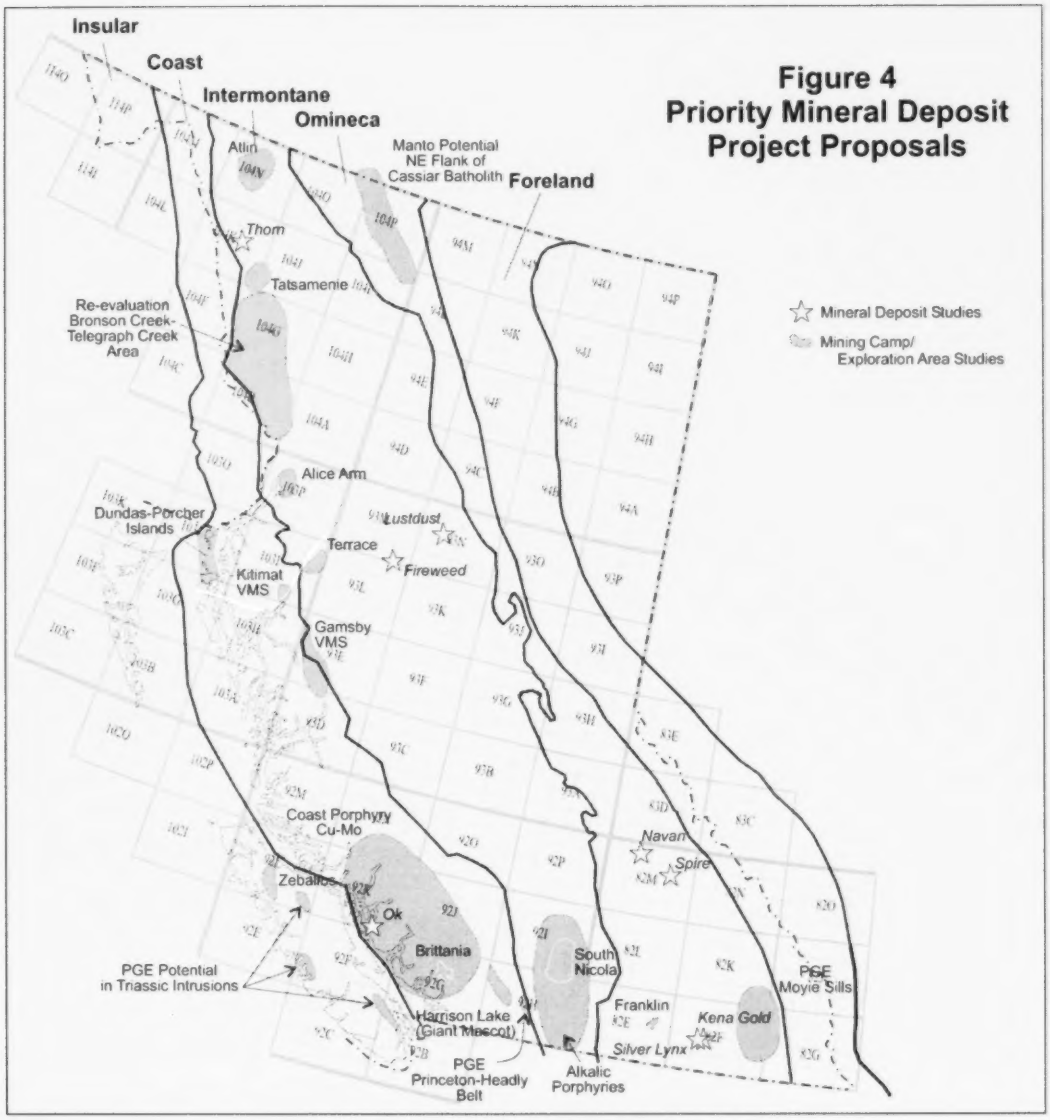

Figure 4. Priority Mineral Deposits Studies for B.C.Mineral Industry.

INDUSTRIAL MINERALS STUDIES

The Workshop did discuss industrial minerals; however, only one new project was proposed by industry possibly reflecting the limited expertise of most participants in this area. The proposed projects that attracted the most interest were market studies for industrial minerals; carbonatites, alkalic intrusions and potential hosts for diamonds; tantalum, and the "green" industrial minerals. More consultation with industrial mineral experts is needed to further develop and refine a list of needed studies in this field and to develop a 5 year plan.

THEMATIC PROJECTS

A large number of potential thematic projects were proposed by government staff covering a diverse range of topics. These reflect many aspects of British Columbia geology that are poorly understood or the ability to enhance our understanding of the economic geology of the province by compiling and interpreting the existing information. The results of the present deliberations are presented in Table 4 and in Appendix I.

While government staff had already suggested numerous thematic projects, industry representatives suggested an additional nine new thematic projects. It was clear from the voting that the industry supported only certain projects as having the potential to attract exploration activity to British Columbia. They also recognized and supported a number of the proposed thematic projects that are clearly important to the broader geoscience community (Petrogeochemical Database for the Cordillera; Geology/mineralogy of contaminated/ARD mine sites) or public (Geoscience Information for the Public - Highway Maps), even though they are of relatively little direct interest to the mineral industry.

TABLE 4
LIST OF PRIORITY THEMATIC PROJECTS FOR B.C. MINERAL INDUSTRY

TITLE	PRINCIPAL GOAL	INDUSTRY BENEFITS
Geoscience Information for the Public (Highway Maps)	Present already collected geoscience information in easy to understand formats for the general public	Increased understanding by the public that minerals form the underpinnings of almost everything in their daily lives
Correlation of Plutonic Rocks of British Columbia	Compile all existing information on plutonic suites in British Columbia	Test correlations of granophile deposit types and commodities (Au W Mo Sn Cu PGE) with ages, location and pluton type. Compile available age dates
Eskay Creek-type deposits in BC	Identify and evaluate areas with potential to host Eskay Creek-type deposits	Refined exploration vectors; evalution of new potential exploration areas
Proterozoic mineralization - new Pb-Zn-Ag targets	Document and evaluate the potential for Broken Hill-type deposits in BC	Improved exploration model; evalution of new potential exploration areas.
Hazelton Group characteristics	Multi-agency collaboration to bring together existing information on the Hazelton Group	Hazelton Group stratigraphy is prospective; project would bring together unpublished information from various sources
Petrogeochemical Database for the Cordillera	Digital compilation of all geochemical data of the Cordillera in a standardized easily accessible format	Instant access to all geochemistry of the Cordillera for lithological correlations, classifications and associations
Geochronological database of B.C.	Provide a digital, searchable, "one-stop shopping" database of all isotopic dates from BC	Framework of ages for known mineral deposits; may point to new targets; more efficient use of geochron funds and resources
PGE Study - rerun RGS in favourable areas	Re-analyse RGS samples for PGEs in selected potential areas.	Identify favourable regions for PGE targets; areas for further work
Manto deposits in BC	Document and evaluate potential for mantos in BC	Improved exploration model; evaluation of new potential exploration areas
Investigate known BC mineral deposits for PGE potential	Analyse ore samples from known deposit types for PGE contents.	Identify deposits with PGE potential; highlight new exploration targets for Cordillera
Alkalic intrusion (non-porphyry) PGEs	Document and evaluate potential for PGE mineralization hosted in alkalic intrusions	Improved exploration model; evaluation of new potential exploration areas

INTEGRATED PROJECTS

A short list of integrated project proposals was tabled at the Workshop. These projects provide the resources and variety of disciplines necessary to address major geoscience problems. The priority list identified 4 field-based projects and the digital geology compilation of B.C. The latter project is strongly supported and ranked second highest.

TABLE 5
LIST OF PRIORITY INTEGRATED PROJECTS FOR B.C. MINERAL INDUSTRY

TITLE	PRINCIPAL GOAL	INDUSTRY BENEFITS
Jurassic Arc to Basin Transition	To provide improved data on the distribution, nature, stratigraphy, age, petrology, and metallogeny of strata in N BC	Improved mineral deposit model for Eskay Creek-type stratabound base and precious metal deposits in British Columbia
Digital compilation of B.C. for internet	Integrated and seamless 1:250K bedrock geology framework dataset for British Columbia	Web GIS access to current BCGS and GSC bedrock geology collections
Proterozoic - Paleozoic Rift Margin - Tuchodi Lakes Map Area (94K) - Muskwa-Tuchodi Anticlinorium	Mapping, mineral deposit studies, stratigraphic studies, geophysical analysis and acquisition?, geochemical analysis	Minerals: sedex, vein, MVT (Cu, Pb, Zn, Ba, Ag, F) and hydrocarbons, new and sustainable development
Kootenay Arc	Marginal Basin environments Eocambrian, Pf sills; deposit characterization. Compilation and Interpretation.	Understand Ag-Pb-Zn; PGE; Cu, Au mantos; good data access.
North Coast (103H, G, I, J)	Modern understanding of structural and tectonic history and metallogeny; effects of Tertiary tectonic overprint.	Better geological framework; evaluate mineral potential in unappreciated areas; potential for unappreciated styles of mineralization; stimulate economic development

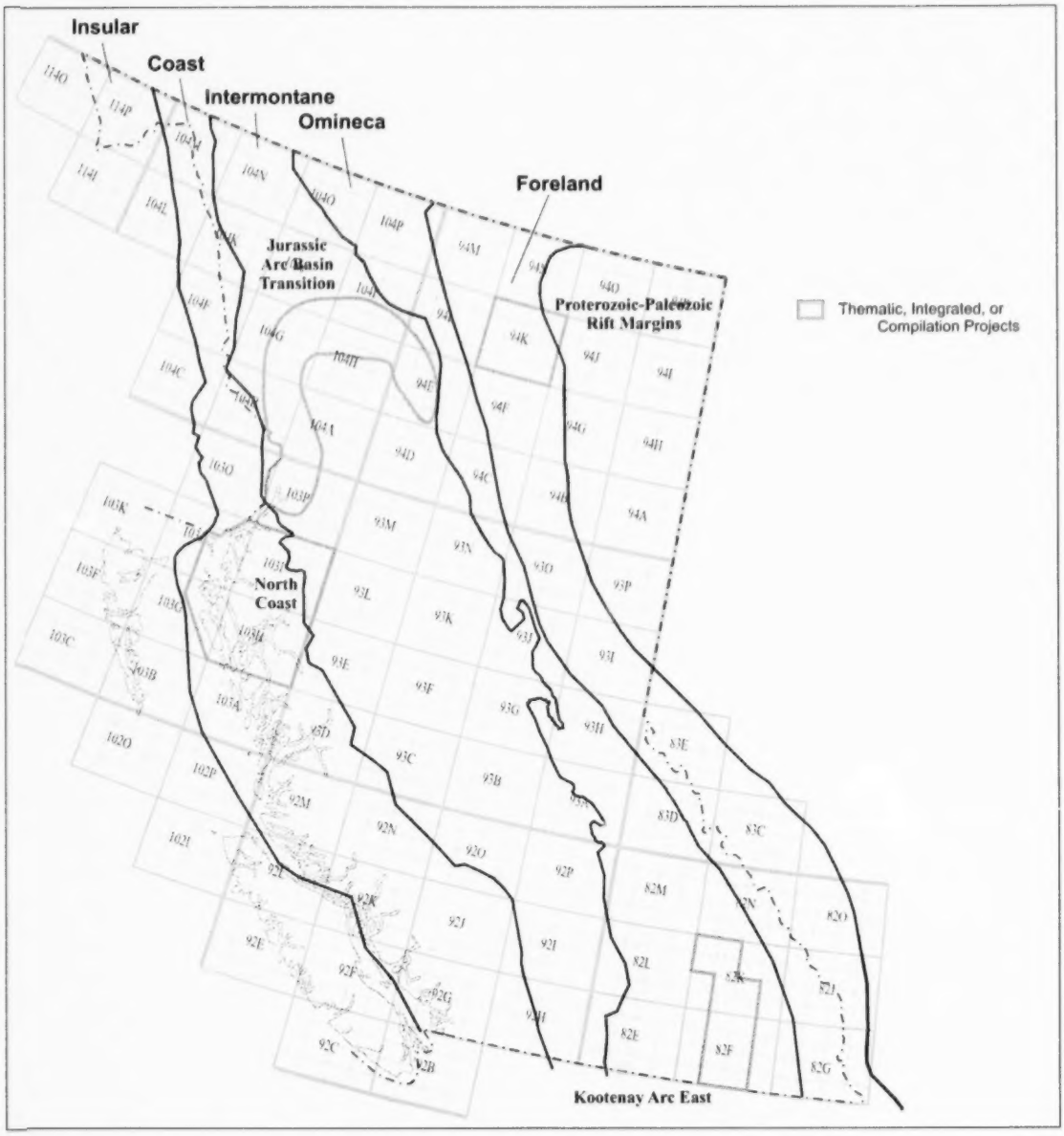

Figure 5. Priority Integrated Projects for B.C. Mineral Industry.

GEOCHEMISTRY AND GEOPHYSICS

Geochemical or geophysical survey needs were not the focus of the Workshop. However, the importance of both types of surveys was raised repeatedly by industry participants. These general discussions are reported below along with specific comments captured by e-mail and in the breakout sessions.

GEOCHEMISTRY

The need for regional geochemical surveys (RGS) was a common thread of discussion throughout the meeting. Industry representatives consistently identified a desire for more RGS data and more orientation or case study-type research over known showings to enhance RGS interpretation. In particular, there was very strong interest in RGS results that relate to platinum group elements (PGEs). Given the interest in PGE's at present – and lack of relevant data in RGS databases, numerous suggestions were made to re-analyse archived RGS samples for PGEs, selected on the basis of geographic area, other element signatures and/or deposit models. Participants also indicated a desire to have gaps filled in RGS coverage of the province, particularly in areas of high mineral potential (Figure 6) and to have additional elements analyzed, *e.g.* Li, B, Be, F.

Some industry representatives also identified a need for more interpretation and guidance regarding the use of regional geochemical data, and more integration of data with geochemical and geophysical survey mapping and mineral deposit studies. Others felt government should provide the raw data (digital and plotted) and leave it to the client to do the interpretation. Industry recognized the important role of Government in systematically compiling geochemical data, *e.g.* to look for PGEs in B.C., though there was some disagreement on the amount of interpretation that should go into those compilations depending upon the sophistication of the user. The exploration community needs orientation surveys over a variety of deposit types in different terrains, and geochemical compilations of case studies and building of models to provide process information and enhance interpretations from existing RGS data. It was suggested that either small orientation surveys be run or industry data could be used; these data sets could be integrated with RGS to generate exploration vectors.

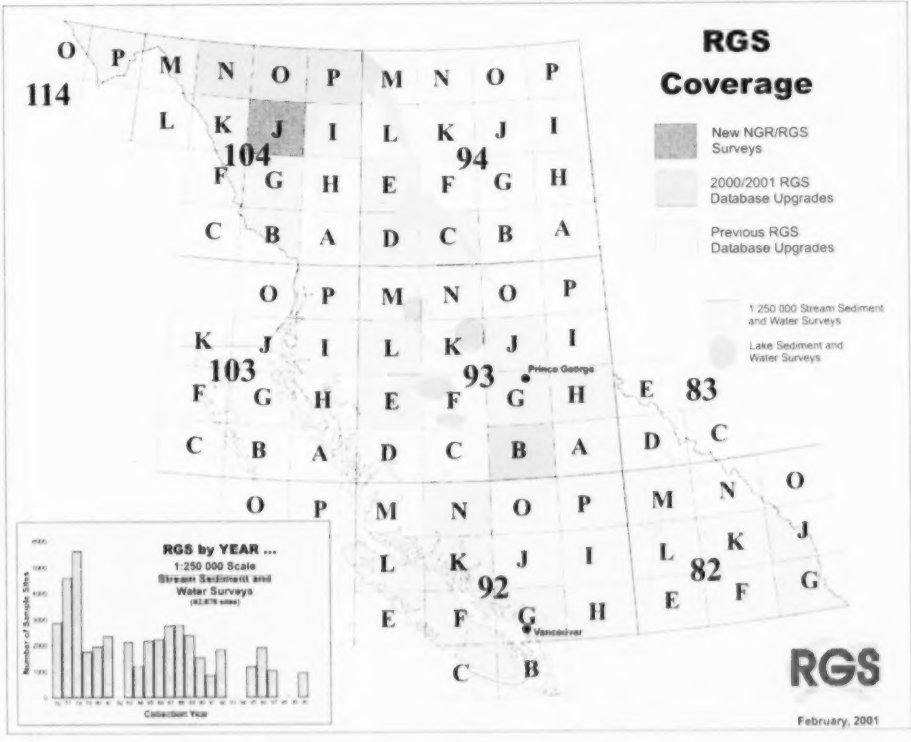

Figure 6. Regional Geochemical Survey Coverage for British Columbia.

GEOPHYSICS

There was less discussion of geophysics than geochemistry at the workshop; however, similar comments were raised. Specifically the need for more interpretation and guidance regarding the use of regional geophysics data, integration of it with mapping, mineral deposit studies and geochemical interpretations, and the analysis of all these data sets by deposit types.

The GSC has geophysicists on staff in both their Sidney and Ottawa offices while the BCGS has never had staff with this expertise. Traditionally both Surveys have relied on contractors to deliver some or all aspects of geophysical surveys.

The exploration community wants examples of applications and guidance regarding interpretations of geophysical data. In one group the industry representatives pointed out that they prefer multi-parameter regional surveys to a simple one, such as airborne magnetometer. However, they also recognized that due to high costs of multi-parameter surveys, it is prudent to complete coverage of a large area with a basic survey as the first step and endorsed the current GSC strategy of covering all areas in B.C. with mineral potential with aeromagnetic surveys.

RECOMMENDATIONS REGARDING GEOCHEMISTRY AND GEOPHYSICS

Three items were particularly strongly supported by industry participants at the Workshop:

(1) The Surveys complete RGS and aeromagnetic surveys of the mineral-rich areas of the province as quickly as possible.

(2) The BCGS sponsor exploration geochemistry workshops or short courses and produce models and guidebooks (cookbooks) for RGS interpretation and applications, *i.e.* applications of geochemical techniques to varying deposit types and in varying landscapes.

(3) The Surveys obtain unpublished industry geochemical and geophysical data to complement the present coverage and interpretation.

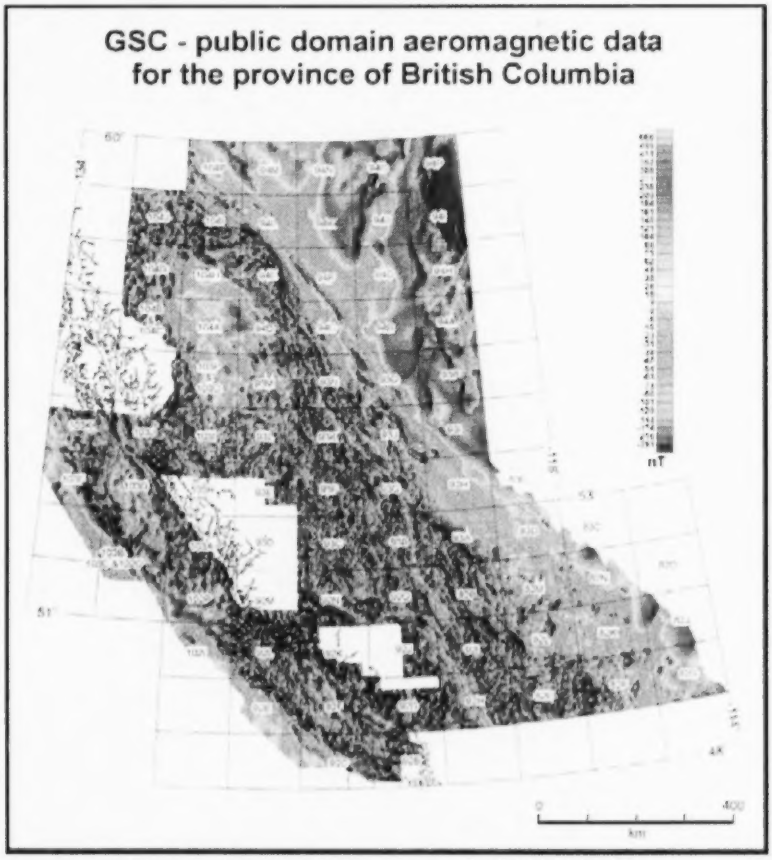

Figure 7. Aeromagnetic Data Coverage for British Columbia.

CONCLUSIONS

The project lists to come out of this Workshop as Geoscience Needs for the British Columbia mineral industry will provide a basis for developing economic development programs by both surveys for the next 5 years. Since a key British Columbia Ministry of Energy and Mines objective is to provide data and assistance which will attract exploration dollars to the province to find and develop new mines, many of the projects that are priorities for industry will be undertaken by the BCGS. The GSC mandate is broader; economic development being only one of a number of objectives. Therefore, the results of the Workshop will affect only the parts of their program that are directed at the Mineral Industry. This report has particular relevance to the Mineral Resources Division, based in Ottawa, and selected mapping projects provided by the GSC Vancouver and Sidney offices.

The industry representatives identified 24 bedrock mapping, 26 mineral deposit studies, 11 thematic studies and 5 integrated studies as priority projects for delivery by the government geological surveys. Some of these projects are already being considered for delivery; the others will be addressed over the next five years as time and resources permit.

Several themes emerged clearly from the Workshop:

The client group for exploration has changed over the last decade from a sector with many major and intermediate size companies to one with largely junior resource companies working with prospectors and independent geologists.

Major companies are generally abandoning the early stage exploration sector and largely restricting their role to opting into some projects at the advanced exploration stage.

Given the current economic climate(Feb., 2001) with gold prices below US$260 per ounce and copper less than US$0.80 per pound; junior companies are focusing on PGEs, diamonds, polymetallic deposits and exotic metals (tantalum, tungsten). They want to see part of the government geoscience program directed towards these commodities and respond with new program initiatives in a timely manner.

There is also a need for ongoing studies of the areas and deposits with potential for the common base (copper and zinc) and precious metals (gold and silver) which have traditionally provided B.C. with much of its mineral revenue.

The industry representatives are strongly in favour of collecting more bedrock geology information at 1:50 000 and 1:250 000-scale as the key database for identifying prospective areas.

They indicated interest in projects which would help them develop target areas for traditional exploration targets, like Sullivan and Myra Falls, and new deposit types, like Eskay Creek, Broken Hill and platinum group elements associated with alkalic rocks.

The industry representatives generally placed a higher priority on mining camp/exploration area studies than individual mineral deposit studies for government surveys.

Industry supported focusing staff efforts on a few selected thematic projects.

All participants felt that more work was necessary to better define the integrated projects before a final selection could be made.

There was considerable interest in the RGS and aeromagnetic databases. They wanted both these regional surveys completed in all areas of the province with significant mineral potential.

Furthermore they saw a real need for upgrading the RGS database to test for new targets, such as PGEs.

Almost all participants felt that they could benefit from government case studies of geochemical and geophysical responses around known mineral deposits and integration of these data, particularly with camp scale and thematic studies.

The next workshop to consider the province's geoscience needs could benefit from making the following modifications to the February 2001 Workshop template. One, invite more industry representatives. Two, shorten the list of proposed projects to provide a reasonable number to consider in one day. Three, provide an estimate of the human and financial resources required for each project. Four, revise the voting procedure to allow participants to assign priorities by assigning resources, probably dollars, to proposed projects.

ACKNOWLEDGEMENTS

The Organizing Committee consisted of Lyn Anglin, Peter Bradshaw, Gerry Carlson, Linda Dandy, Cathie Hickson, Dave Lefebure, Nick Massey and Bert Struik. Our thanks to Ben Ainsworth and Bill Wolfe who made presentations during the Workshop to start the participants off on the right direction. The ever helpful Trygve Höy assisted with the facilitation of the Omineca/Rockies breakout sessions, while Jim Ryan helped with the Intermontane sessions. Staff from both the Geological Survey of Canada and British Columbia Geological Survey helped pull a significant amount of information together in a short period of time. In particular, Otto Krauth, Loretta Wong and Jim Ryan of the GSC and Kim Passmore, Mike Fournier and Verna Vilkos of the BCGS are thanked for their help on crucial items.

Photo 3: Organizing Committee and Breakout Group Facilitators. Back Row (right to left): Peter Bradshaw, Gerry Carlson, Dave Lefebure. Front Row: Nick Massey, Linda Dandy, Trgve Hoy, Cathie Hickson, Jim Ryan, Bert Struik. (Missing Lyn Anglin).

APPENDIX I

LISTING OF ALL PROJECTS CONSIDERED IN BRITISH COLUMBIA MINERAL INDUSTRY GEOSCIENCE NEEDS WORKSHOP

TABLE A1
MAPPING PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
82E Penticton	Geology of the Penticton map-area	Mapping	Omineca/ Rockies	New digital geological map and database. New geological synthesis. New geochron. for many units of unknown age.	Refinement of geological history of south-central BC	Better understanding of metallogenesis, delineation of propects.	1:250 000 scale digital map and GIS. Contribution to Geological Atlas and map of Canada. Additions to geochron database
82E/2 82E/3 82E/4(E) Anarchist-Kobau	Tertiary Extensional Margin	Mapping	Omineca/ Rockies	Provide a modern understanding of the complexly deformed, Paleozoic Anarchist Group.	Upgrade understanding of the mineral occurrences in the region.	Interesting Au, Ni, PGE and VMS potential has attracted little serious exploration in recent years due to a lack of information.	1:50k maps, selected mineral deposit descriptions, annual articles, digital data, talks and posters
82F/7 82F/10 82F/15 West flank of Purcell Anticlinoriu m	West flank of Purcell Anticlinorium	Mapping	Omineca/ Rockies	Upgrade the stratigraphy/ metallogeny of the Upper Purcell Supergroup and Lower Windermere.		This stratigraphy has potential to host a variety of Pb-Zn and barite sedex, Au, stratabound Cu, skarn-hosted Mo and W and gemstone deposits.	1:50k maps, deposit setting descriptions, annual articles, digital data, talks and posters
82G Fernie	Geology of the Fernie map-area.	Mapping	Omineca/ Rockies	New map, GIS		Better understanding of metallogenesis, delineation of propects.	1:250 000 scale digital map and GIS. Contribution to Geological Atlas and map of Canada. Additions to geochronolgical database
82K/3, 6, 11, 82M/11,14	Kootenay Arc to Barkerville	Mapping	Omineca/ Rockies	Refine stratigraphy and structure of Eastern Kootenay terrane and relationships to high-grade metamorphic complexes in northern Kootenay Arc.	Settings of carbonate-hosted massive sulphides and BHT deposits; adjunct to NATMAP project in progress	Better understanding of settings of mineral deposits; improved exploration guides	1:50k maps, 1:250k compilation map; annual articles, talks and posters.

CONTINUED TABLE A1
MAPPING PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
82M/2 82M/3 82M/6 82M/11 82M/13 82M/14 Shuswap Metamorphic Rocks	Shuswap Metamorphic Rocks	Mapping	Omineca/ Rockies	Produce modern maps with detailed units.	Decipher stratigraphic relationships and correlations and related metallogeny.	Provide key information to encourage exploration in an area often ignored and very poorly understood.	1:50k maps, annual articles, digital data, talks and posters.
92C/9S 10S Leech River Complex	92C/9S 10S Leech River Complex	Mapping	Coast/ Insular	Detailed mapping of the Leech River Complex.		High mineral potential area; attractive for industrial mineral deposits, gold veins, VMS, etc.	1:50k Maps, annual articles, digital data, talks and posters.
92E/16 North of Gold River	92E/16 North of Gold River	Mapping	Coast/ Insular	Map large pendants of mineral-rich Sicker Group.		Identify areas with polymetallic VMS potential, such as Dragon property.	1:50k maps, annual articles, digital data, talks and posters.
92F/14 92F/11 Mt. Washington	Mt. Washington	Mapping	Coast/ Insular	Update geology of Tertiary intrusions and base of Naniamo Group	Document nature and importance of gold occurrences on flat-lying structures.	Prospective area for gold mineralization.	1:50k maps, annual articles, digital data, talks and posters.
92I/3,4,5,11, 14	Southern Kutcho Fm equivalents	Mapping	Intermontane	Identification and delineation of important VMS hosting package	geochronology and petrochemistry	New umderstanding in area with important VMS potential	1:50k maps, deposit setting descriptions, annual articles, talks and posters
92J/7 92J/8W 92J/10W Pemberton	Pemberton	Mapping	Coast/ Insular	Identify metavolcanic rocks with VMS potential in pendants in Coast Belt.		Outline areas with previously unrecognized "greenstone belt" potential for VMS deposits.	1:50k maps, annual articles, digital data, talks and posters.
92L/2 92L/7 92L/10S; 92E/15N Bonanza Lake to Zeballos	Bonanza Lake to Zeballos	Mapping	Coast/ Insular	Map a little known Jurassic volcanic belt with high mineral potential.	Assess the potential of the Tertiary intrusives.	Exploration interest for skarns, porphyries and veins; VMS in basal Bonanza and limestone and marble in Quatsino.	1:50k maps, annual articles, digital data, talks and posters.
93B Quesnel	Geology of Quesnel map area	Mapping	Intermontane	Make fully new geology map	undestand neogene and quaternary tectonic evolution and groundwater environments	improved mineral potential map and Cu-Au and Au targets in oceanic and arc terranes	1:100 000 scale maps of bedrock and surficial geology

CONTINUED TABLE A1
MAPPING PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
93C Anahim Lake	Neotectonic Evolution and Volanism in the Coast to Intermontane Transition Zone	Mapping	Intermontane	Understanding the neotectonic evolution and volanism in the Coast Plutonic to Intermontane Transition Zone	Interpretation of areoborne geophysics with bedrock geology; Interpretation of crustal structures	Tertiary Au-Cu-Mo and industrial volcanic and intrusives, Mesozoic Cu-Au; Till data; Needs RGS; knowledge infrastructure	Updated 1:250 bedrock and surficial maps; Detailed volcanic stratigraphy and structural work;
93D 103A Bella Coola west half and Laredo Sound east	Structural architecture of the Bella Coola map area	Mapping	Coast/ Insular	Vastly improve the geology map to understand Coast Mtn geology, young mtns, establish mineral potential.	Develop relationship between the Bella Coola community, bioscience and geoscience partners	Clearly established mineral potential, geotechnical development base for port and valley corridor	1:100 000 and 1:250 000 scale maps, reports, CD or equivalent dataset
93H/5 Lottie-Bow Belt	Lottie-Bow Belt	Mapping	Omineca/ Rockies	Demonstrate that Slide Mountain terranes are attractive for VMS deposits.	Provide a more complete description of the Slide Mountain near the type-locality.	Could point to untested potential for VMS deposits in numerous other Slide Mountain Terranes.	1:50k maps, annual articles, digital data, talks and posters.
93L/4 Southern Howson Range (Smithers)	Southern Howson Range (Smithers)	Mapping	Intermontane	Map Mesozoic volcanics on edge of Bowser Basin.	Take advantage of recent logging road access.	Attractive geological setting for Eskay Creek-type and epithermal deposits.	1:50k maps, annual articles, digital data, talks and posters.
93N Manson River	Complete modern update of Manson River geology at 1:250 000 scale	Mapping	Intermontane	Make an up to date 1:250 000 scale map of the Manson River area		best information for mineral exploration evaluation	1:250 000 scale map and new 1:50 000 scale maps of 93N/13 and 14
93N/6, 11, 13, 14 Lustdust Area	Lustdust Area	Mapping	Intermontane	Map Cache Creek and cross-cutting mineralizing intrusions.	Update old mapping (1:250k)	Characterize the setting for porphyry, manto and skarn deposits.	1:50k maps, deposit setting descriptions, annual articles, digital data, talks and posters
94C Meselinka	Meselinka	Mapping	Omineca/ Rockies	Compilation and mapping of granites and country rocks. Map sheet extends over the Intermontane - Omineca boundary		Mantos, Porphyry	
94C/4 94C/5(SW) 94D/8(E) 94D/9(S) Hogem North	Hogem North	Mapping	Intermontane	Complete mapping of the mineral-rich Hogem Batholith.		New data in area with porphyry Cu-Au-PGE? potential.	1:50k maps, deposit setting descriptions, annual articles, digital data, talks and posters

CONTINUED TABLE A1
MAPPING PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
94D McConnel Creek	McConnel Creek (94D): filling a map and geological knowledge gap	Mapping	Intermontane	Provide a first 1:250K map of the region; address major stratigraphic and structural issues.		mineral resource region in the east (Mesozoic volc's); potential energy resource in west (Bowser and Sustut basins)	reports, 1:50K maps; possibly 1:250K map
94E Toodoggone River	Toodoggone River (94E); filling a map-base and knowledge gap	Mapping	Intermontane	Provide a modern 1:250K for mineral resource framework; study displacement of major faults; examine Stikine Assemblage	increase knowledge of Hazelton Group, major faults, Stikine Assemblage	Cu Pb Zn Au Ag	1:250K map; reports
94E/11(N) 94E/12(N) 94E/13(S) 94E/14(S) Toodoggone North Extension	Selected 1:50k Mapping 94E	Mapping	Intermontane	Determine distribution of Black Lake intrusions and host volcanics with associated RGS anomalies.		Early Jurassic Au-Cu porphyry and epithermal Au mineralization.	1:50k maps, annual articles, digital data, talks and posters.
94K/2(NW) 94K/3 94K/4(E) 94K/5(E) 94K/6 94K/7(SW) 94K/11 94K/12 Muskwa	1:50k mapping in Tuchodi Lakes	Mapping	Omineca/ Rockies	Map the Muskwa Assemblage; a metal-rich stratigraphic package elsewhere.	Update old mapping (1:250 k).	Area ripe for grass-roots exploration for sediment-hosted Cu and Pb-Zn.	1:50k maps, annual articles, digital data, talks and posters.
94M Rabbit River	Upgrading of reconnaissance 1;250,000 mapping of Rabbit River sheet	Mapping	Omineca/ Rockies	Upgrading of 1:250,000 mapping; better definition of structural style and distribution of metallotects	Good oppoturnity for study of biostratigraphy and paleogeographic elements in miogeoclinal strata	Guide for further mineral exploration in relatively accesssible area	Final coloured geological 1:250,000 map and accompanying report (s)
103C/16 Queen Charlotte Islands	103C/16 Queen Charlotte Islands Sicker Group	Mapping	Coast/ Insular	Demonstrate that Sicker Group volcanics and massive sulphide occurrences occur on QCI	Update geology of QCI dramatically.	Virtually no exploration for VMS in the QCI.	1:50k maps, mineral deposit descriptions, annual articles, digital data, talks and posters.

CONTINUED TABLE A1
MAPPING PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
103G 103H Hecate Strait and Douglas Channel	Geology of Douglas Channel - Hecate Strait map area	Mapping	Coast/ Insular	Provide new bedrock geology map	Cenozoic & Neogene tectonic evolution of western Coast Belt and E margin of Hecate Strait	Improved delineation & understanding of rx hosting Au skarns, VMS deposits, Au veins (Surf Inlet type)	New 1:250,000 (and some 1:100,000) scale bedrock geology maps
103I 103J Terrace and Prince Rupert	Geology of Prince Rupert -Terrace map area	Mapping	Coast/ Insular	Make new 1:250K geology and mineral potential maps		Better estimate of mineral potential; better assingnment of meta rocks to appropriate terranes; knowledge infrastructure	1:250,000 (and possibly 1:100,000) bedrock geology maps; revised mineral potential map
103I/2 103I/7 Kitimat Area	103I/2 103I/7 Kitimat Area	Mapping	Coast/ Insular	Map out distribution of felsic volcanics and related massive sulphide occurrences.		Potential new VMS camp.	1:50k maps, mineral deposit descriptions, annual articles, digital data, talks and posters.
103I/9(W) 103I/10(E) 103I/15 103I/16W Zymoetz River	Zymoetz River	Mapping	Intermontane	Upgrade geology in an area of high mineral potential.		Detailed mapping of region with known VMS, porphyry and skarn potential.	1:50k maps, annual articles, digital data, talks and posters.
103J/1 103J/2 103J/7 103J/10 103G/15 103G/16 Dundas and Porcher Islands	Dundas and Porcher Islands	Mapping	Omineca/ Rockies	Map extension of Alaska VMS belt, particularly Alexander Terrane metavolcanics.	Characterize style and setting of VMS mineralization.	Improved knowledge of poorly understood mineral belt.	1:50k maps, annual articles, digital data, talks and posters.
103P Nass River	Understanding the Mesozoic strata of western Stikinia - Nass River	Mapping	Coast/ Insular	Provide maps and a better understanding of the Mesozoic strata of western Stikinia,	see arc to basin transition integrated project	provides a better framework for exploration of sedimentary and plutonic-hosted mineral deposits (e.g. Eskay Ck)	1:50K maps of 103P 11, 12E; 1:100,000 compilation of northwest Nass River area (including 103P 5, 12W, 13, 14; 103O9,16

CONTINUED TABLE A1
MAPPING PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
104G Telegraph Creek	Telegraph Creek southwest (NTS 104G 1, 2, 7, 8) and selected 1:50k maps	Mapping	Intermontane	to provide improved data on the distribution, nature, stratigraphy, age, petrology, and metallogeny of Mesozoic strata	Improve understanding of the distribution, nature, periodicity and settings for Early to Middle Jurassic arc volcanism	improved mineral deposit model for Eskay Creek type stratabound base and precious metal deposits in BC	interim reports (Current Research, Geological Fieldwork); poster and other presentations at regional geoscience meetings
104G/1 104G/8(W) 104G/9(S) North Bowser Margin	North Bowser Margin	Mapping	Intermontane	Map Mesozoic volcanics on edge of Bowser Basin.		Attractive geological setting for Eskay Creek-type and epithermal deposits.	1:50k maps, annual articles, digital data, talks and posters.
104I/15 104I/16 Cry Lake-Major Hart Area	Cry Lake-Major Hart Area	Mapping	Omineca/ Rockies	Map frontier area underlain by suspected Yukon-Tanana Terrane, ultramafics, North American sediments and Eocene intrusions.		Delineate prospective stratigraphy for VMS and examine epithermal Au-Ag potential near Eocene intrusions.	1:50k maps, annual articles, digital data, talks and posters.
104I/2 104I/1W Kutcho Belt	Kutcho Belt	Mapping	Intermontane	Document regional volcanics that host Kutcho Creek deposits.		Detailed maps showing favourable stratigraphy for VMS deposits.	1:50k maps, annual articles, digital data, talks and posters.
104N Atlin (north half)	Surprise Lake Batholith, Atlin 104N North half	Mapping	Intermontane	Understanding the Surprise Lake Batholith		Integration of new mapping in south half	New 1:250,000 (and some 1:100,000) scale bedrock geology maps
104N/NE, 104O	Yukon-Tanana extension into BC	Mapping	Intermontane	Map extension of VMS hosting stratigraphy from Yukon into northern BC		New umderstanding in area with important VMS potential	1:50k maps, deposit setting descriptions, annual articles, talks and posters

TABLE A1
MINERAL DEPOSIT STUDY PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
Greenwood camp	Greenwood camp (including Lexington 082ESE041/42) (082E/2)	Mineral Deposits	Omineca/ Rockies	Document recent discoveries of new deposit types in this historic mining camp		Point out new target types in easily accesible area.	Report; poster; talk
Franklin camp	Franklin camp (082E/8)	Mineral Deposits	Omineca/ Rockies	Document and characterise the occurrence of PGEs in Eocene Coryell Intrusions including the Maple Leaf deposit		Identify potential new targets for PGE exploration; new exploration guidelines.	Map (1:20,000); report; poster
SE BC	Moyie Sills - PGE (082F/8,9,16; G/12, 13; K/1)	Mineral Deposits	Omineca/ Rockies	prove up potential in sills; geochem; petrography; RGS re-evaluation/sill sections		Establish potential of target	
Kena Gold	Kena Gold (082FSW237)	Mineral Deposits	Omineca/ Rockies	Determine lithologic setting and structural controls of a poorly understood deposit		Draw attention to the potential for bulk-tonnage Au deposits in the Rossland Grp	Report; poster; talk
Silver Lynx	Silver Lynx (082FSW378)	Mineral Deposits	Omineca/ Rockies	Establish the style and setting of massive sulphide mineralization; determine stratigraphic controls	Lithogeochemistry of host volcanics to identify magma type and alteration styles	Understanding of a new mineral deposit type in the Rossland Group.	Map (1:10,000); report, talk: poster
MAG	MAG (082G/12)	Mineral Deposits	Omineca/ Rockies	Identify source of large magnetic anomaly and relate to possible Fe oxide mineralization	Map sparse outcrop in area and integrate with results of Industry drilling.	Point Industry attention to deposit type not well known in BC.	Report; talk
Spire	Spire (082M 278)	Mineral Deposits	Omineca/ Rockies	Document and map new Besshi-type VMS discovery in the Goldstream camp		Highlight the potential for additional discoveries in Lardeau Grp rocks	Map (1:10,000); report; poster; talk
Broken Hill/Navan	Broken Hill/Navan (082M 279-281)	Mineral Deposits	Omineca/ Rockies	Determine nature of mineralization and setting; compare to classic Broken Hill deposit	Confirm Paleoproterozoic age of host rocks	Demonstrate potential for BHT deposits in SE BC; provide exploration vectors.	Map (1:10,000); report; poster; talk
Sicker camp	Sicker camp (092B/13)	Mineral Deposits	Coast/ Insular	Map large-scale alteration patterns associated with VMS mineralization	Determine nature of "quartz ores" and relationship to massive sulphides.	Improved understanding of interaction of mineralizing fluids and hostrocks; better exploration vectors	Map (1:20,000); report; talk; poster

CONTINUED TABLE A1
MINERAL DEPOSIT STUDY PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
Vancouver Island	Potential for PGE's in Triassic intrusions of VI (092B/13; C/16; F/1, 5; L/1)	Mineral Deposits	Coast/ Insular	Map; sample; re-interpret RGS; re-analyse for PGE's;	placer data; geochronology	new exploration targets	detailed maps (1:10k) of key areas; report; talk; poster;
Buttle Lake camp	Buttle Lake camp (092F/5, 12)	Mineral Deposits	Coast/ Insular	Map large-scale alteration patterns associated with VMS mineralization		Improved understanding of interaction of mineralizing fluids and hostrocks; better exploration vectors	Report; talk; poster
Tofino Nickel	Tofino Nickel (092F 029)	Mineral Deposits	Coast/ Insular	Map and characterise a poorly understood gabbroic Ni-PGE deposit		Potential to open up new exploration target areas on Vancouver Island	Map (1:10,000); report; poster
Britannia camp	Britannia camp (092G/11)	Mineral Deposits	Coast/ Insular	Evaluate stratigraphic setting of VMS deposits in the Cretaceous Gambier Gp	Lithogeochemistry and geochronology of host sequence	Highlight potential for VMS in other Cretaceous enclaves in the Coast Belt	Map (1:10,000); report; poster
Southern Coast Belt	Coast Porphyry Cu-Mo (092G, K, J)	Mineral Deposits	Coast/ Insular	Characterize and document known deposits;evaluate potential for other occurrences	geochronology of plutons	Evaluate potential for deposits in a 'frontier' area	Maps (1:10k) and reports of deposits; compilation map (1:100k); talk; poster
Giant Copper	Giant Copper (092HSW001, 2)	Mineral Deposits	Intermontane	Map and evaluate occurrences to determine potential for Fe-oxide style mineralization.		Highlight a deposit type not well known in BC	Map (1:10,000); report; poster
Southern Nicola camp	Southern Nicola camp (including the Fox 092ISE191) (092H/NE; I/SE)	Mineral Deposits	Intermontane	Evaluate the potential for VMS mineralization in this new exploration area		Improved understanding of stratigraphic and other controls on VMS mineralization	Map (1:20,000); report; poster; talk
Harrison Lake (Giant Mascot) camp	Harrison Lake (Giant Mascot) camp (092H/12)	Mineral Deposits	Coast/ Insular	Determine the nature of, and controls on, PGE mineralization in the mafic-ultramafic rocks.	Determine relationship between the mafic complex and the Spuzzum Intrusion	Highlight potential for tholeiitic intrusion-hosted Ni-PGE deposits in BC; potential exploration vectors for use in other occurrences	Map (1:20,000); report; poster; talk

CONTINUED TABLE A1
MINERAL DEPOSIT STUDY PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
PGE potential of Princeton-Hedley Belt (Coquihalla Intrusions)	PGE potential of Princeton-Hedley Belt (Coquihalla Intrusions) (092H/6, 11)	Mineral Deposits	Intermontane	Study mineral occurrences and related intrusions; sample for PGE analysis		Information on 'hot' commodity in area requiring study	Report; map (1:10,000), talk
Southern Intermontane	Alkalic porphyries of southern Intermontane (092H/E; I/E)	Mineral Deposits	Intermontane	Copper Mountain - Afton: deposit mapping; structure		Better understanding of controls on mineralization; improved exploration guidelines	Maps (1:10k) and reports of deposits; compilation map (1:100k); talk; poster
Mount Fleet syenite complex	Mount Fleet syenite complex (092I/16)	Mineral Deposits	Intermontane	Investigate potential for PGE and REE mineralization	Map lithologic units within syenite complex.	Highlight potential for alkalic hosted PGE deposits in BC; potential exploration vectors for use in other occurrences	Map (1:10,000); report; poster; talk
Afton	Afton (092JNE012, 013, 023)	Mineral Deposits	Intermontane	3-D zoning geometry and chemistry of mineralizating system	Petrology of host rocks	Improved exploration vectors potentially applicable to other deposits	Report; talk; poster
OK porphyry Cu-Mo	OK porphyry Cu-Mo (092K 008)	Mineral Deposits	Coast/ Insular	Determine lithologic and structural controls on mineralization	U-Pb zircon geochronology of intrusive phases to determine host age;	Highlight the potential for large Porphyry Cu-Mo deposits in an underexplored belt.	Map (1:10,000); report; talk; poster
Zeballos camp	Zeballos camp (092L/2)	Mineral Deposits	Coast/ Insular	Determine lithologic and structural controls on Au mineralization associated with Tertiary granitic intrusions.	Petrochemistry and U-Pb geochronology of intrusions	Potential new exploration guidelines.	Report; Map (1:10,000); poster; talk
Gamsby VMS camp	Gamsby VMS camp (93E/E)	Mineral Deposits	Coast/ Insular	Evaluate bimodal volcanic sequence for Kuroko-type VMS	Establish stratigraphic and metallogenic linkages with Jurassic Hazelton Arc	Point Industry towards a new prospective metallotect	Map (1:20,000); report; talk; poster
Fireweed	Fireweed (093M 151)	Mineral Deposits	Intermontane	Confirm syngenetic nature of mineralization and relationship to felsic volcanics.	Determine Eskay Creek type nature of mineralization; U-Pb zircon geochronology of rhyolites.	Opens up a new exploration target in Cretaceous volcanic sequences of central BC	Report; map (1:10,000), talk

CONTINUED TABLE A1
MINERAL DEPOSIT STUDY PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
Lustdust	Lustdust (093N 009)	Mineral Deposits	Intermontane	Map lithologies and alteration patterns; determine structural controls on mineralization	Describe a B.C. manto deposit.	Show importance of relationships between porphyry, skarn and manto deposits.	Report; map (1:10,000), talk
Northern Quesnel Trough (camp)	Northern Quesnel Trough (camp) (093N)	Mineral Deposits	Intermontane	Evaluate potential for porhyry Cu-Au mineralization in poorly known area.		Improve understanding of potential exploration area.	Compilation map (1:50,000); deposit maps as appropriate; report; poster; talk
Queen Chalotte Islands	Tertiary epithermal gold deposits, e.g.: Cinola (103F)	Mineral Deposits	Coast/ Insular	Characterize the nature of mineralization, structural and lithologic controls		identify new exploration targets	Map (1:10,000); report; poster
Banks Island Au camp	Banks Island Au camp (103G/8)	Mineral Deposits	Coast/ Insular	Investigate enigmatic gold mineralization in Coast Belt.		Could demonstrate potential for gold deposits in Coast Belt.	Map (1:20k); report, poster, talk
Kitimat VMS District	Kitimat VMS District (103I/2)	Mineral Deposits	Coast/ Insular	Evaluate the setting and stratigraphic position of VMS deposits in a underexplored Jurassic volcanic package.	Confirm stratigraphic and metallogenic linkages with Jurassic Hazelton Arc.	Highlight a prospective VMS metallotect.	Map (1:20,000); report; talk; poster;
Terrace mining camp	Terrace mining camp (103I/7-11)	Mineral Deposits	Intermontane	Determine structural controls on the numerous Au vein occurrences and evaluate how they relate to Tertiary extension		Better exploration vectors	Report; Map (compilation and deposit scales); poster; talk
Dundas-Porcher Islands camp	Dundas-Porcher Islands camp (103JSE)	Mineral Deposits	Coast/ Insular	Characterise style and setting of VMS mineralization	Compare occurrences to those known in adjacent part of Alaska.	Icreased knowledge base in poorly understood prospective mineral belt	Report; Map (compilation and deposit scales as appropriate); poster; talk
Red Mountain	Red Mountain (103P 086)	Mineral Deposits	Intermontane	Setting and style of mineralization; structural and lithologic controls		Improved understanding of poorly understood deposit; better exploration vectors	Map (1:10,000); report; poster

CONTINUED TABLE A1
MINERAL DEPOSIT STUDY PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
Alice Arm (Kitsault) camp	Alice Arm (Kitsault) camp (103P/6)	Mineral Deposits	Coast/ Insular	Evaluate and characterise the varying styles and settings of mineralization in the camp.	Determine potential for shallow-water environments, and Eskay Creek-type deposits, in the Jurassic Hazelton Gp.	Refined exploration guidelines especially for new deposit types.	Map (compilation and deposit scales as appropriate); report; poster; talk
Bronson Creek - Telegraph Creek area	Re-evaluation of Bronson Creek Telegraph Ck area (104B, G)	Mineral Deposits	Intermontane	Use wealth of data, in conjunction with fieldwork to improve interpretiaons of mineral deposits		Revisit occurrences explored during the late 1980's flow thru period to identify missing opportunities	Compilation metallogenic map (1:100k); detailed maps (1:10k) of key deposits; report; talk; poster
Dease Lake Placer camp	Dease Lake Placer camp (104I/5, 6)	Mineral Deposits	Intermontane	Age and stratigraphic setting of placers; determine proximity indicators	Identify potential lode sources	Potential for new discoveries of both placer and lode Au deposits; improved exploration vectors	Map (1:20,000); report; talk; poster
Thorn	Thorn (104K 116)	Mineral Deposits	Intermontane	Determine style and setting of tertiary Au-Ag acid-sulphate mineralization		Potential for ttransitional deposits in Sloko Gp; better exploration guidelines	Map (1:10,000); report; talk; poster
Tatsamenie (Golden Bear) camp	Tatsamenie (Golden Bear) camp (104K/1,4)	Mineral Deposits	Intermontane	Document the relationships between Carlin style mineralization and porphyry deposits		Improved understanding of Carlin type deposits in this area; refined exploration vectors for use elsewhere in BC	Map (1:20,000); report; talk; poster
Atlin camp	Atlin camp (104N/12)	Mineral Deposits	Intermontane	Confirm and document reported PGEs in placers;	Determine proximity indicators in placers and potential load sources for PGEs and Au;	Highlight potential for PGE sources in northern BC	Map (1:20,000); report; talk; poster
Silvertip	Silvertip (104O 038)	Mineral Deposits	Omineca/ Rockies	Document the largest manto deposit in BC - mineralization, alteration, structural controls		Highlight potential for manto deposits in BC	Map (1:10,000); report; talk; poster

CONTINUED TABLE A1
MINERAL DEPOSIT STUDY PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
Manto potential of NE flank of Cassiar batholith	Manto potential of NE flank of Cassiar batholith (104P)	Mineral Deposits	Omineca/ Rockies	Metallogenic study of Paleozoic carbonates on NE flank of the Cassiar batholith		New exploration vectors in area of potential.	Report; Map (compilation and detailed deposit scales); poster; talk
MINFILE evaluation to focus targets	MINFILE evaluation to focus targets	Mineral Deposits	BC	Review and assess areas with siginificant aggregations of MINFILE occurrences; assign deposit types		clearer targets for exploration; new exploration vectors to apply in other areas.	report; talk

TABLE A1
INDUSTRIAL MINERAL PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
Carbonatites/ alkalic intrusions/ diamonds	Carbonatites/ alkalic intrusions/ diamonds	Industrial Minerals	BC	Focus on follow-up to previous carbonatite studies		Better descriptions of poorly known intrusive complexes	Compilation map (1:1,000,000); deposit maps (1:10,000); report; poster; talk
Gemstones	Gemstones	Industrial Minerals	BC	Continue to document and evaluate potential for gemstone production in BC		Improved exploration models; evalution of new potential exploration areas; advice to prospectors and developers	Report; poster
Glass sand	Glass sand	Industrial Minerals	BC	Document and evaluate potential for glass sand sources in BC		Identify areas of potential	Report; poster
Granite-Coast & Insular Belts	Granite in Coast/Insular Belts- rip-rap and dimension stone	Industrial Minerals	BC	Identify potential resources for export and local use possibilities		New exploration targets/potential	Report; poster
Green industrial minerals	Green industrial minerals	Industrial Minerals	BC	Document and evaluate potential for perlite, vermiculite, etc.		Direct industry to minerals with good environmental credentials	Deposit maps (1:10,000); report; poster; talk; quality analysis
Lightweight aggregates	Lightweight aggregates	Industrial Minerals	BC	Document and evaluate potential for lightweight aggregate sources in BC		Highlight potential of areas in BC.	Report; poster
Market studies for Industrial Minerals - worldwide and local BC markets	Market studies for Industrial Minerals - worldwide and local BC markets	Industrial Minerals	BC	Evaluate the global and local markets for BC's industrial minerals		Better understanding of product markets; improved investment decisions	Reports
Offshore mineral resources	Offshore mineral resources	Industrial Minerals	BC	Document and evaluate potential for offshore mineral resorces in BC		Improved exploration models; evalution of new potential exploration areas	Maps (1:250,000); reports; poster; talk
REEs in BC	REEs in BC	Industrial Minerals	BC	Document and evaluate potential for REEs in BC		Improved exploration model; evalution of new potential exploration areas	Compilation map (1:2,000,000); deposit maps (1:10,000); report; poster; talk
Serpentinite and olivine in BC	Serpentinite and olivine in BC	Industrial Minerals	BC	Document and evaluate potential for serpentinite and olivine sources in BC		Improved exploration models; evalution of new potential exploration areas.	Compilation map (1:2,000,000); Deposit maps at appropriate scale; Report; poster, talk
Tantalum in BC	Tantalum in BC	Industrial Minerals	BC	Document and evaluate potential for Ta-Nb sources in BC		Evalution of new potential exploration areas	Compilation map (1:1,000,000); deposit maps (1:10,000); report; poster; talk

TABLE A1
THEMATIC PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
Adams Plateau	Adams Plateau stratigraphy and mineral deposits	Thematic	Omineca/ Rockies	Correlations with surrounding geology and deposits		Identification of mineralized stratigraphic and/or structural successions	Maps (1:10,000) of deposits and compilation (1:250,000); Report; Poster
Alkalic intrusion (non-porphyry) PGEs	Alkalic intrusion (non-porphyry) PGEs	Thematic	BC	Document and evaluate potential for PGM mineralization hosted in alkalic intrusions		Improved exploration model; evalution of new potential exploration areas.	Maps (1:20,000) of deposits; reports; poster, talk
ARD from Non-Mine/Natural Sites	ARD from Non-Mine/Natural Sites	Thematic	BC	Collect baseline geochemical data from natural/undisturbed areas.		Shows natural impact of ARD and mitigation	digital database; reports; talks
Carbonate-hosted Pb-Zn deposits	Carbonate-hosted Pb-Zn deposits	Thematic	Omineca/ Rockies	Document known deposits and evaluate potential for carbonate hosted Pb-Zn deposits in BC		Refined understanding of these deposits; improved exploration vectors/parameters	Compilation map (1:2m) and report; detailed maps (1:10k) and reports of important deposits;
Province Wide plutonic rocks	Correlation of Plutonic Rocks of British Columbia	Thematic	BC	Compile all existing information on plutonic suites in British Columbia		Test correlations of granophile deposit types and commodities (Au W Mo Sn Cu PGE) with ages, location and pluton type	Digital compilation including geochemistry, geochronology, and petrology
Develop regional tectonic models for Crodilleran evolution	Develop regional tectonic models for Crodilleran evolution	Thematic	BC	Resolve geological problems		lead to new exploration strategies	reports, external scientific papers; posters; talks
Environmental Deposit Models	Environmental Deposit Models	Thematic	BC	Provide information on environmental impacts associated with different deposit types		Better and earlier assessments of remediation measures and potential costs	Reports; poster; talk
Epithermals with coeval porphyry roots	Epithermals with coeval porphyry roots	Thematic	BC	Identify areas with transitional settings and attractive mineral potential		Provide target areas and data for styles of mineralization not well understood in BC	Reports; local area maps (1:20,000); posters, talk

CONTINUED TABLE A1
THEMATIC PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
Ertzberg/ Grassberg analogues in BC	Ertzberg / Grassberg analogues in BC	Thematic	BC	Document and evaluate potential for giant Cu-Au Porphyry deposits in BC		Identify exploration areas.	Compilation map (1:2,000,000); Report; poster, talk
Eskay Creek-type deposits in BC	Eskay Creek-type deposits in BC	Thematic	Coast/ Insular	Identify and evaluate areas with potential to host Eskay Creek-type deposits	Refine mineral deposit model; correlate stratigraphy and environments in Hazelton Group	Refined exploration vectors; evalution of new potential exploration areas	Maps (?1:100,000); report; poster; talk
Thematic-BC	Focus on high unit value mineral deposits like Eskay Ck or skarns	Thematic	BC	Complete mapping and deposit characterization		Data for most attractive deposit types	detailed maps (1:10k) and reports of important deposits
Compilation of Geochron-ology database	Geochrono-logical database of B.C.	Thematic	BC	Provide a digital, searchable, "one-stop shopping" database of all isotopic dates from BC		Framework of ages for known mineral deposits; may point to new targets; more efficient use of geochron funds and resources	CD-ROM, Cordlink module
Geology/ mineralogy of contaminated/ ARD mine sites	Geology/ mineralogy of contaminated/AR D mine sites	Thematic	BC	Petrologic and mineralogic characterization of contaminated/ARD mine sites in BC		Improved knowledge database to help develop effective remediation measures	Reports; talks
Layperson publications	Geoscience Information for the Public (Highway Maps)	Thematic	BC + Yukon	Present already collected geoscience information in easy to understand formats for the general public	Increase knowledge of the public in geoscience issues and enhance their participation in issues with a geoscience focus	Increased understanding by the public that minerals form the underpinnings of almost everything in their daily lives	Easily accessible information in a user friendly format (*e.g.* internet; posters). Highway maps
Hazelton Group characteristics	Hazelton Group characteristics	Thematic	Coast/ Insular	Multi agency collaboration to bring together existing information on the Hazelton Group	Geochronology, petrochemistry	Hazelton Group stratigraphy is prospective; project would bring together unpublished information from various sources	Compilation maps and stratigraphic columns; 1:50k mapping in key areas

CONTINUED TABLE A1
THEMATIC PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
Intermontane Belt compilation	Intermontane Belt compilation	Thematic	Intermontane	Provide geological metallogenetic analysis		re-awakening interest. Provide economic focus	metallogenic compilation map/s; report, poster
Investigate known BC mineral deposits for PGE potential	Investigate known BC mineral deposits for PGE potential	Thematic	BC	Analyse ore samples from known deposit types for PGE contents	Ore mineralogy and geochemistry	Identify deposits with PGE's in economic quantities; Highlight new exploration targets for Cordillera	digital database release
Jurassic metallogeny (desktop)	Jurassic metallogeny (desktop)	Thematic	BC	Compile known mineral occurrences and settings hosted in Jurassic sequences	Assess potential for other permissible deposit types	Improved understanding of important mineralization epoch in BC; new exploration ideas	Compilation map/s (1:1,000,000 + 1:250,000 where needed);digital databases; poster; talk
Manto deposits in BC	Manto deposits in BC	Thematic	BC	Document and evaluate potential for mantos in BC	Determine ages of mineralization in known deposits	Improved exploration model; evalution of new potential exploration areas	Report; deposit maps (1:10,000) poster, talk
Metallogeny of Devono-Miss in Coast/Insular Belts	Metallogeny of Devono-Miss in Coast/Insular Belts	Thematic	Coast/ Insular	Document known mineral occurrences and their hosts in Devono-Mississippian sequences		Highlight potential in underexplored areas	Map/s (1:500,000); report, poster
Metallogeny of the Coast Belt (desktop)	Metallogeny of the Coast Belt (desktop)	Thematic	Coast/ Insular	Compile and assess known mineral occurrences and settings	Assess potential for other permissible deposit types	Improved knowledge of mineralization in underexplored belt; new exploration ideas	Compilation maps (1:500,000); digital databases; report; poster
Mineralization and vein systems in crustal structures	Mineralization and vein systems in crustal structures	Thematic	BC + Yukon	Understand the difference between mineralized and non-mineralized veins		Improved exploration methodology and therefore success of discovery	Atlas of vein characteristics
Mississippi Valley-type deposits in BC	Mississippi Valley-type deposits in BC	Thematic	BC	Document and evaluate potential for MVT deposits in BC	Determine ages of mineralization in known deposits	Improved exploration model; evalution of new potential exploration areas	Report; deposit maps (1:10,000) poster, talk

CONTINUED TABLE A1
THEMATIC PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
Non-conventional syngenetic massive sulphide deposits (transitional VMS-Sedex)	Non-conventional syngenetic massive sulphide deposits (transitional VMS-Sedex)	Thematic	BC	Study mineralization with mixed Sedex and VMS characteristics	Characterise the mineralogical and geochemical expression of mineralization	Better understanding of hybrid massive sulphide deposits will produce improved exploration vectors	Maps of deposits (1:10,000); Reports - internal and external; posters
Northern BC porphyries (Kerr, Galore, Shaft, Red Chris)	Northern BC porphyries (Kerr, Galore, Shaft, Red Chris)	Thematic	Intermontane	Compare and contrast settings and features of adjacent porphyry Cu-Au deposits		Refined understanding of these deposits; improved exploration vectors/parameters	Maps (1:10,000) of deposits and compilation (1:250,000); Report; Poster
Offsets of regional faults. Synthesis and mapping.	Offset of Regional Faults and Paleomagnetism	Thematic	Intermontane	Understanding the timing and displacement of structural offsets in the Cordillera		Origin and displacement of certain crustal blocks may significantly affect their mineral potential	Synthesis papers and stratigraphy
Olympic Dam (Fe oxide)	Olympic Dam (Fe oxide)	Thematic	BC	Document and evaluate potential for Fe oxide deposits in BC		Identify new potential exploration areas.	Compilation map (1:2,000,000); Report; poster, talk
Petrochemistry database for Cordillera	Petrogeochemical Database for the Cordillera	Thematic	BC + Yukon	Digital compilation of all geochemical data of the Cordillera in a standardized easily accessible format	Provide background information on contaminants for enviromental studies/impacts	Instant access to all geochemistry of the Cordillera for lithological correlations, classifications and associations	Digital, standardized geochemical compilation
PGE Study - rerun RGS in favourable areas	PGE Study - rerun RGS in favourable areas	Thematic	BC	Re-analyse RGS samples for PGEs in selected potential areas		identify favourable regions for PGE targets; areas for further work	digital database release
Placer gold-PGM	Placer gold-PGM (Paleoplacer)	Thematic	Omineca/ Rockies	Application of placer proximity criteria to identify potential load sources. (Paleodrainage)	1) Investigate potential Cretaceous-Tertiary paleoplacers: 2) document and verify reported PGEs in placers: 3) proximity of high-Hg placers in Wells area to source	Improved exploration model; evalution of new potential exploration areas; improved exploration vectors for lode gold/PGE sources	Reports; poster; talk

CONTINUED TABLE A1
THEMATIC PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
Proterozoic mineralization - new Pb-Zn-Ag targets	Proterozoic mineralization - new Pb-Zn-Ag targets	Thematic	Omineca/ Rockies	Document and evaluate the potential for Broken Hill-type deposits in BC		Improved exploration model; evalution of new potential exploration areas.	Maps (1:250,000); Deposit maps (1:10,000) Report; poster, talk
Regional alteration patterns in a potential host volcanic package	Regional alteration patterns in a potential host volcanic package	Thematic	BC	Determine areas with large scale alteration patterns associated with VMS mineralization		Improved understanding of interaction of mineralizing fluids and hostrocks; better exploration vectors	Map (1:100,000) Report; poster; talk
SEDEX studies (Non-Aldridge)	SEDEX studies (Non-Aldridge)	Thematic	Omineca/ Rockies	Document and evaluate potential for Sedex deposits in central and northern BC		Evalution of new potential exploration areas.	Compilation maps (1:250,000); Report; poster, talk
Stratabound Cu-Ag-Co (SE BC)	Stratabound Cu-Ag-Co (SE BC)	Thematic	Omineca/ Rockies	Document and evaluate potential for stratabound Cu-Ag-Co deposits in BC		Improved exploration model; evalution of new potential exploratic areas.	Compilation map (1:2,000,000); Report; poster, talk
Thermochronology and metamorphic map for orogen calibration.	Thermochronology Map of the Cordillera	Thematic	BC + Yukon	Compile and collect some new data for the timing of metamorphism or therm. resetting in different domains of the Cord.	Determine if metamorphic boundaries of different ages cross established regional geology contacts	Where mineralization or remobilzation is associated with metamorphic fluids, age of mineralization could be determined	New metamorphic map of Cordillera, highlighting the ages as well as grade of metamorphism; database of ages
Triassic metallogeny (desktop)	Triassic metallogeny (desktop)	Thematic	BC	Compile known mineral occurrences and settings hosted in Triassic sequences.	Assess potential for other permissible deposit types	Improved understanding of important mineralization epoch in BC; new exploration ideas.	Compilation map/s (1:1,000,000 + 1:250,000 where needed);digital databases; poster; talk
Volcanic Redbed Copper Potential	Volcanic Redbed Copper Potential	Thematic	Intermontane	Document and evaluate potential for deposit type being mined in Southern Cordillera		Evalution of new potential exploration areas.	Compilation map (1:2,000,000); Report; poster, talk
Windermere Succession Correlations	Windermere Succession Correlations	Thematic	Omineca/ Rockies	Stratigraphic correlations b/w Old Fort Print, Kaza Grp Horsethief, Northern Parcells		Show deposit potential through analogues with other successions	reports; talks; poster; stratigraphic sections

TABLE A1
INTEGRATED PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
Kootenay Arc East (082F, K)	Kootenay Arc East	Integrated	Omineca/ Rockies	Marginal Basin environments Eocambrian, Pf sills; deposit characterization. Compilation and Interpretation.		Understand Ag-Pb-Zn; PGE; Cu, Au mantos; Good data access	1:250k compliation with new and old data; mineral deposit maps and reports
92K 92F 92L(E) 92E Central Vancouver Island Transect	Central Vancouver Island Transect	Integrated	Coast/ Insular	Understand the structural and tectonic history of the Insular/Coast Belt transition and overprint of Tertiary structures	Petrology and geochronology of Intrusive suites; mineral camp studies;	Better geological framework for understanding known mineralization; potential for unappreciatedstyl es of mineralization	Maps (1:250k; 1:50k in some areas); report; external papers; mineral camp maps (1:10,000 etc); fieldtrip for industry
South Coast Belt (92H, G, J)	South Coast Belt (92H, G, J)	Integrated	Coast/ Insular	Modern understanding of structural and tectonic history and metallogeny; Tertiary tectonic overprint	"People Issues" hazards (Earthquakes, landslides in coastal areas and along Fraser valley, Tsunamis, Volcanic); water; etc.	Better geological framework; evaluate mineral potential in unappreciated areas. Potential for unappreciated styles of mineralization. Stimulate Economic Development	1:50k maps in key areas; 1:250k compliation with new and old data; mineral deposit maps and reports; metallogenic synthesis
Tuchodi/ Muskwa 94K	Proterozoic - Paleozoic Rift Margin - Tuchodi Lakes Map Area (94K) - Muskwa-Tuchodi Anticlinorium	Integrated	Omineca/ Rockies	Mapping, mineral deposit studies, stratigraphic studies, geophysical analysis and acquisition?, geochemical analysis	Could include Hazard studies	Minerals: SEDEX, Vein, MVT (Cu, Pb, Zn, Ba, Ag, F) and Hydrocarbons, new and sustainable development (GSC Portfolio 2.1)	1:50k maps in key areas; 1:250k compliation with new and old data; mineral deposit maps and reports; stratigraphic
Central British Columbia (093M)	Middle Cretaceous Magmatism and Metallogeny in Central British Columbia	Integrated	Intermontane	Understanding Middle Cretaceous Magmatism and Metallogeny in Central British Columbia	Geochronology of felsic volcanics and plutons	Intrusion related Au, VMS (Mexico) East Pogo type	1:50k maps in key areas; mineral deposit maps and reports; metallogenic synthesis

CONTINUED TABLE A1
INTEGRATED PROJECTS

Area	Title	Type	Belt	Principal Goal	Other Goals	Industry Benefits	Products
North Coast (103H, G, I, J)	North Coast (103H, G, I, J)	Integrated	Coast/ Insular	Modern understanding of structural and tectonic history and metallogeny; Effects of Tertiary tectonic overprint.	Complete geochemical (RGS) and geophysical databases.	Better geological framework; evaluate mineral potential in unappreciated areas. Potential for unappreciated styles of mineralization. Stimulate Economic Development	1:50k maps in key areas; 1:250k compliation with new and old data; mineral deposit maps and reports; metallogenic synthesis
Northern BC	Jurassic arc to basin transition integrated project	Integrated	Intermontane	To provide improved data on the distribution, nature, stratigraphy, age, petrology, and metallogeny of strata in N BC	Improve understanding of the distribution, nature, periodicity and settings for Early to Middle Jurassic arc volcanism	Improved mineral deposit model for Eskay Creek type stratabound base and precious metal deposits in British Columbia	Geological maps at 1:50K and/or 1:100K scales
Digital compilation of B.C. for internet	Digital compilation of B.C. for internet	Integrated	BC	Integrated and seamless 1:250K bedrock geology framework dataset for British Columbia	Linkage with Canadian Geoscience Knowledge Network (CGKN)	Web GIS access to current BCGS and GSC bedrock geology collections	Integrated 1:250K bedrock geology atlas for British Columbia
Intermontane	VMS deposits of Intermontane belt	Integrated	Intermontane	Provide compendium of all layers of data and focus new mapping		Focus all government expertise on interpretation	Metallogenic compilation map; mineral deposit maps and reports; geochronology
Kootenay Arc			Omineca	Understand Ag-Pb-Zn-; PGE, Cu, Au mantos	Marginal basin environments	Mineral-rich belt requires modern interpretation	Compilations, deposit descriptions, maps